Original Articles.

ULCERATIVE ANGINA. AN OCCASIONAL EARLY SYMPTOM IN TYPHOID FEVER.

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In April, 1910, at the meeting of the medical section of the New York Academy of Medicine, I reported in three cases of typhoid fever an ulcerative angina as an unusual and sometimes confusing symptom. The scanty mention of this condition in American medical literature is the reason for the following report and review.

Seven years ago my attention was first brought to this so-called "ulcerative typhoid angina" by my incorrect diagnosis of syphilis in a woman of 27, who, although still at work when I saw her, had for some days been suffering from malaise, headache, sore throat, and general febril symptoms. In addition to a moderate elevation of temperature, a considerable acceleration of pulse, and a thick yellowish vaginal discharge, she presented a coated tongue and a superficial oval, yellowish grey ulceration, the size of a small bean, at the upper third of the left anterior pillar of the fauces. This ulcer was surrounded by a narrow zone of reddened mucous membrane, and the lymphatic glands at the angle of the left jaw were a little enlarged and tender. A culture upon blood serum showed a staphylococcus aureous. In the course of a few days an aggravation of the constitutional symptoms, the development of a palpable spleen, the exhibition of a few rose spots, and the change from a negative to a positive Widal reaction, revealed the correct diagnosis. Within ten days from my first observation the ulcer gradually contracted and healed without visible scar. The course of her disease was severe and complicated by several hemorrhages and a consecutive relapse.

Four years ago a woman of 40 was transferred for examination and diagnosis to my wards at the New York City Hospital, after several days' observation and treatment upon the syphilitic service there. Before admission to the hospital several physicians had diagnosed her malady as ulceration of the throat secondary to syphilis. She, too, ran a severe course of typhoid fever, complicated with hemorrhage and later with intestinal perforation, followed by laparotomy and eventual recovery.

The third case occurred at the French Hospital upon the service of one of my colleagues, Dr. McConnell. A tentative diagnosis of diphtheria was at first made, but the negative throat culture and later a positive Widal and blood culture, in addition to the subsequent course of the disease, proved it to be typhoid fever.

A fourth case, a young man of 27 years, was admitted to my service at the French Hospital, Oct. 28, 1911, with a temperature of 103°, pulse of 96, and respiration of 28, complaining of malaise, sore throat, headache, and general febrile symptoms. It was impossible to determine accurately the onset of his disease. He had been confined to bed with a cold and dry cough for a few days nearly three weeks before, returned to bed with diarrhea and vomiting five days before, and had a nose bleed three days before entrance. His trunk and extremities were covered with a maculo-papular eruption, resembling somewhat a secondary syphilis. He complained of sore throat, exhibited slight salivation, and marked pyorrhea. His tongue was moist, coated with a yellowish covering and presented three ulcerations. In size they varied from 0.5 to 1.5 cm. in their longest diameter. The smallest was situated beneath the tip of the tongue. The second, the largest and deepest, on the left edge an inch from the tip, opposite a jagged tooth, exhibited irregularly excavated edges, and was filled with a dirty gray slough, upon removal of which a base of muscle fibres was disclosed with very little bleeding. The third was smaller, half way between this and the tip. Three other similar ulcerations were noted upon the faucial pillars, respectively; on the left anterior pillar near the soft palate, on the left posterior pillar at about its middle, and on the upper third of the right anterior pillar. These were discrete, superficial, oval or elliptical, of approximately the same size as the largest ulcer upon the tongue, greyish yellow in color, and were surrounded by a light hyperemic zone. Upon very carefully wiping away the greyish exudate they exhibited a somewhat reddened base, but did not bleed. Smears and cultures from these ulcers revealed only staphylococci and a few short plump non-motile rods (Bradbury.) No spirillae nor spirochetae were to be found. The Widal reaction, negative at entrance, became positive three days before his death (November 4th, one week after entrance). The lymphatic glands draining these ulcers were at first neither tender nor appreciably enlarged; but became greatly swollen within four days coinciding with an increase in the leucocyte count (5,200 to 11,400) and in the percentage of the polynuclear leucocytes (68 to 84). Permission for a post-mortem examination was refused, so that unfortunately a histological examination of the ulcers was not made.

A fifth case: Male, Austrian, age 23, waiter, entered my service at the French Hospital, Oct. 21, 1913, admission No. 24,514. For nine days before entrance, he complained of malaise, insomnia, constipation, anorexia, chilly feelings, and headache, two days later feverish, weak and dizzy; next day vomited after a purge, and this was followed by a diarrhea which persisted till entrance. Gave up work four days before and took to bed three days before entrance, with a temperature of 104.5°. Headache had persisted and increased in severity. No

nose bleed. Upon entrance patient presented the typical appearance of typhoid at the height of the disease with a dicrotic pulse, tympanites, a spleen enlarged to percussion but not palpable, and a very profuse maculo-papular eruption covering the trunk and extending to the arms and forearms but not involving the thighs or legs. Many of the spots were hemorrhagic. The tongue was coated and moist, with very prominent papillae at its tip; there was marked gingivitis and salivation. The pharynx was uniformly congested and largely covered with tenacious mucus. There were two tiny ulcers the size of the head of a white pin at the edge and upper extremity of the right anterior faucial pillar and a single one of slightly larger size and an irregular outline at the corresponding position on the left anterior pillar. These ulcers were covered with a thin grayish exudate which could be wiped away only with some difficulty on account of the patient's gagging. There were no palpable glands nor was there any tenderness. Hemoglobin 100%, leucocytes 4500 with 48% polyneuclears, 46% lymphocytes, 5% large mononuclears and 1% eosinophiles, Widal positive, blood culture positive, Diazo marked. The fever intermitted between 101° and 105.5°; the pulse usually about 100 varied between 90 and 112, the respirations usually below 30 varied between 24 and 32; and the urine, at first normal, showed a few days before death, a moderate febrile reaction. The treatment included bathing or sponging, hexamethylenamine, and two doses of typhoid vaccine administered on the 21st (60 million); and the 24th (100 million) October 23d. Smears and cultures were made from ulcers of pharynx by Dr. Bradbury. No typhoid bacilli but a staphylococcus aureus and a streptococcus were found. Oct. 24th, the ulcers on right side had nearly healed; that on the left pillar was larger, deeper, still more irregular in contour, covered with a white exudate and surrounded by a much reddened mucosa. A small irregular ulcer was found upon the left edge of the tongue and two tiny ones on the uvula. Oct., 25th, ulcerations of left pillar smaller and cleaner, less redness of surrounding mucosa. Tongue dry, congested, and bleeding. Three tiny ulcerations on right edge of tongue. Oct. 26, all remaining ulcers healing, tongue very dry, glazed and bleeding. Oct. 27th, ulcers scarcely visible except upper one on uvula. Severe hemorrhage from post nares. No bleeding point found. Oct. 28th, 7 p. m., severe epistaxis uncontrolled by packing. Oct. 29th, profuse crop of hemorrhagic spot from one-eighth to one half inch in diameter on back and on calves of legs; large irregularly-shaped ecchymoses of some depth in skin over interscapular, and sacral regions and on calves and anterior surface of legs. Hemorrhage from nose nearly controlled by packing. Hgb. 68%. Leucoytes 8000, polyneuclears 51%, eosinophiles 1%. Oct. 30th, patient very weak and restless, urine involuntary, pallor striking, nose still bleeding despite packing. Systolic blood pressure 130. consolidation of right upper lobe. Patient died that night. Unfortunately no autopsy was permitted.

A sixth case: (For the privilege of observing and reporting this case, I am indebted to the courtesy of Dr. Lipset.) Male, Italian, age 26, cook, entered French Hospital, November 1, 1913, admission No. 24,569. For eight to ten days before entrance, complained of continuous severe frontal headache; seven days before entrance, epistaxis and fever; next day went to bed and remained there. Ran a typical but short course of rather severe typhoid with delirium or stupor; continuous fever at about 104°; rather rapid respirations (32 to 44) corresponding to a severe bronchitis; considerable rather tenacious sputum; dicrotic pulse (90 to 120, usually about 100); an enlarged spleen; a moderate crop of rose spots; tympanites; involuntary urine; and a positive Widal reaction and blood culture.

On the eleventh day* of the disease his pharynx was red, swollen, and the uvula markedly edematous. Two small ulcers were noted on the left anterior pillar and a third, slightly larger at the top of the right anterior pillar of the fauces; each covered with a thick yellowish white exudate and surrounded by an edematous and congested mucous membrane. The uvula was covered in spots with a similar exudate. There was no glandular enlargement nor apparent tenderness, but the patient's stuporous condition made it impossible to determine whether or not the throat was sore or swallowing painful. By the thirteenth day, the exudate upon the upper half of each pillar and uvula had coalesced and entirely obscured the ulcerations. The exudate disappeared by the fifteenth day and the ulcer upon the right side, about the size of a pea, was seen to be granulating and somewhat elevated above the rest of the mucous membrane while those of the left were much smaller, one almost healed and the other healing. By the eighteenth day the latter had healed, the congestion had faded and the edema had disappeared, and by the nineteenth day the right one had also healed. At no time were any glands made out to be enlarged. On the 14th day smears and a culture from these ulcers were made by Dr. Bradbury. Great care was exercised to avoid producing bleeding, and no typhoid bacilli were found; but a staphylococcus aureus and two streptococci.

Synonyms: Typhoid angina, pharyngeal typhoid, Bouveret's ulcers, Duguet's ulcerations.

Louis[1], Chomel[2], Murchison[3], and Jenner[4] were cognizant of the occasional occurrence of an inflammation and ulceration of the pharynx in typhoid, but they certainly did not distinguish these ulcers from other types of pharyngeal involvement in enteric fever. Nonat[5] was the first (1843), so far as I can determine, to publish a clear and distinctive description of this lesion: "Les ulcerations dont il s'agit affectent ordinairement l'un des piliers du voile du palais; elles sont ovalaires; leur étendue varie; il en est qui ont la grandeur d'une pièce de vingt-cinq centimes; d'autres sont un peu plus petites; leur bords sont taillés à pic; leur font est grisâtre; la membrane muqueuse qui les entoure est injectée, rouge sur une surface plus on moins grande. . . Elle existait déja vers la fin du première septenaire ou au commencement du second."

I find no further mention of the lesion until 1876 when Bouveret[6], for whom the ulcers are

* Although his febrile course was brief, the day the patient took to his bed was reckoned as the first day of disease.

frequently named, published the account of a carefully observed case. He failed to mention Nonat's previous communication. In 1883 the condition was ably presented to the "Société medicale des hôpitaux de Paris" by Duguet[7] and thoroughly discussed there by a number of eminent clinicians, several of whom cited illustrative cases. Among them Landouzy[7] dilated upon the features essential to differentiate this from similar throat lesions in tuberculosis and in syphilis. He also cited several cases from his own experience, one of which apparently exhibited an active and early tuberculous lesion at both apices.* Shortly before and after this communication several contributions from the French school ([8] to [10] and [11] to [14]) appeared, some of them attempting to compare the pharyngeal with the intestinal ulcers upon the basis of a similar involvement of lymphoid tissue and an analogous histological architecture, but this contention could be supported neither theoretically nor anatomically.

The Germans were not interested in Bouveret's ulcer until some years later ([15] to [19]). In 1887 Landgraf[20] published a comprehensive and critical analysis of this lesion. He refused to acknowledge its specificity, mentioned a case occurring 48 days after the onset of the fever, denied any involvement of lymphoid tissue, and condemned the lack of bacterial investigation. We are indebted to the Strassburg Clinic ([16], [21], [22], [23]) for the most prolonged, persistent and carefully planned clinical observations as well as for the first account of the occurrence of the identical lesion in another disease, tuberculosis.[23]

England and America have paid but scanty attention to its existence. Osler[24] merely states that the pharynx may be the seat of catarrh or ulceration. McCrae who contributed the article on typhoid in Osler's System of Medicine[25], does not mention it. J. Lorrain Smith in Albutt's System[26] alludes to it briefly and quotes Rénon's opinion that the ulceration is caused not by typhoid bacilli, but by staphylococci and streptococci. The English translations of two notable German works[27], [28] discuss it; one of them (Nothnagel) in some detail. Curschmann, the author of the latter, describes the lesion fully, comments upon its practical disappearance from medical literature for many years, and quotes four cases where the throat symptoms gave rise to erroneous diagnoses of croup, diphtheria, scarlet fever, and syphilis.

Frequency. Devic and Schaefer estimated their frequency at 20% (1 in 5 or 6 cases), Hofmann quoted by Landgraf[20] at 11% (28 in 255), Novotny[29] from Chvostek's clinic at Vienna at 6% (6 in 102), Ludin[30] from Gerhardt's clinic at Basle at 12% (8 in 68), and Samuel[22] from Krehl's clinic at Strassburg at 7% (76 in 1102). Blum[23] regards the last mentioned percentage a minimum. The percentage varied markedly in the different years as well as in the different epidemics. At Strassburg there were no ulcers noted in 80 cases from 1888 to 1890. From 1890 on, the number noted began to increase except in 1900, when there were 56 cases, and none of them exhibited ulcers. In 1901, 2 in 38 cases; 1902 to 1905, 8 to 12%; in 1906, 17 in 127 cases; in 1907, 7 in 63 cases. Blum contrasts 10 in 512 (2%) cases from 1888 to 1900 with 66 in 590 cases (9%) from 1901 to 1907. At Basle 4 of 30 cases in 1907 exhibited ulcers, 2 of 13 in 1908, 1 of 15 in 1909, 1 of 10 up to April, 1910.

Numbers. Although most cases previously reported presented but a single ulcer, at Strassburg two or more occurred in 15 of the 76 recorded, and in 5 of my 6 cases, whereas the greatest number exhibited in any one case was eight. Letulle[31] pictures the throat of a patient with seven ulcers.

Healing. Trouillier[32] states that the ulcers heal from within five to thirty days; most writers specify from two to three weeks. They healed within ten days in the four of my six cases who survived. All agree that they leave no scar.

Glandular Involvement. Only two of my six cases were accompanied with enlarged and tender glands. Wagner[18] describes a slight swelling, and Derignac[14] recorded several with tender glands. Rapin[12], Von Willer[33] and Trouillier[32], on the contrary, found neither enlargement of the lymph glands draining the ulcers nor any appreciable tenderness there.

Subjective Symptoms. In most instances the throat lesion was discovered, not because of any complaint upon the part of the patient, but as a result of a detailed routine examination. Sore throat or dysphagia occurred in three of my six cases, in two of Nonat's[5] seven, in one of Duguet's[7] three, in two of Lécorché and Talamon's[10] three, and in one of Von Willer's[33] seven, whereas at Strassburg pain occurred in but four of seventy-six cases, and in only one of them was it severe, in which instance the pain persisted as long as the ulcers lasted. Hoarseness, cough and dyspnea have also been noted.

Histology. As these ulcers are seldom late lesions, autopsy records are available in but few instances. The French writers at first claimed that the lymphoid tissue of the phayngeal ring was involved, but they presented no anatomical evidence in proof, and Landgraf plainly showed that the same type of ulcer is also found where there are no lymphoid follicles (lip and epiglottis); and he believes that they belong to the ordinary superficial nutritional disturbances of the mucous membrane under the head of catarrh and that redness and erosion are only milder stages of the same process. The only case of Duguet's[7] three which came to autopsy showed merely a disappearance of the more superficial epithelial cells without

* See Ludin's and Blume's communications.

any involvement of lymphoid elements. Letulle[31] shows a section through a deep ulcer, the floor of which is formed by the muscular and fibrous tissue of the faucial pillar; there is a pronounced accumulation of lymphoid elements below the floor and at the edges of the ulcer. Two of the Strassburg[23] cases were examined histologically by Schmidt of Zurich. They showed neither the large cell infiltration of the intestinal lesion nor anything characteristic or suggestive of typhoid fever, so that Blum concludes that the ulcers are merely catarrhal. This opinion is supported by the description of one of Duguet's cases in which an ulcer gradually developed upon a very much reddened mucous membrane; of one of Roque's 34 cases in which the ulcer was preceded by an herpetic-like vesicle and of one of Derignac's[14], in which a very small greyish ulcer developed the day after the appearance of a slight elevation of epithelium like an indistinct herpatic vesicle. Further support of their catarrhal nature is furnished by their healing without leaving a scar.

Bacteriology. As one might expect, and very likely depending upon the care employed to avoid producing bleeding, the results of the smears and the cultures that have been made in the published cases are at great variance. Renon[35], Bonnette[36], Letulle[31], and Schaefer[37] found only staphylococci or streptococci. Neither Vamossy's[38] case nor Wagner's[18] three cases showed any typhoid bacilli. Bendix and Bickel[5] report one positive finding in ten cases of various types of angina in typhoid. Besson[40] found typhoid bacilli six times in ten cases, but he punctured the tonsils each time. Novotny[29] claims to have isolated in pure culture, a paratyphoid bacillus B. from a pharyngeal ulcer on about the twelfth day of the disease in a patient whose blood, urine and stools showed typical typhoid bacilli. Blum found typhoid bacilli in three of five cases; but in sections of the buccal mucous membrane and of the ulcerations from two of Blum's cases, Schmidt[23] was unable to find any typhoid bacilli. Staphylococci were found alone in my first case; and despite painstaking and repeated attempts in my fourth case, Bradbury only discovered staphylococci and a short, thick, non-motile bacillus. In neither my fifth nor my sixth cases were any typhoid bacilli found, but in both staphylococci and streptococci. While making the smears and cultures in each of these three cases, Bradbury was especially careful to avoid producing any bleeding. This evidence seems to show that these ulcers are caused by or are secondarily infected by germs other than typhoid bacilli. Even a larger number of positive findings would hardly convince one of their dependence upon the typhoid bacillus itself since smears and cultures from such an ulceration might very readily be inoculated by organisms directly from the blood.

Cause, Relation to Other Infections and Specificity. From a study of the reported examples of this lesion, the very few histological and relatively few bacteriological examinations, we are led to the conclusion that these ulcers are superficial nutritional catarrhal processes produced by dryness of the mouth and occluded nose (Landgraf[20]), possibly involving largely parts exposed to pressure and poorest in lymphatics (Fraenkel[19], Trouillier[32]), and in all probability caused by some secondary infection, staphylococcus or streptococcus (Blum[23]), in turn dependent upon improper cleansing of the mouth (Friedlander[15]). The same type of ulceration has been noted in paratyphoid (Blum[23] three in nine cases, Novotny[29] once), so that it cannot be used to differentiate a typhoid from a paratyphoid fever, as was claimed by Letulle.[31] An apparently identical ulcer has also been described in four cases of tuberculosis (Blum[32], Ludin[30], possibly one of Landouzy's cases), so that despite the claims of most of the abovementioned writers, Bouveret's ulcers are not absolutely specific, although most suggestive of enteric fever.

Relation to the Severity of the Disease, Prognosis, and Relapses. Letulle's[31] experience, based upon more than sixty cases, leads him to believe that it occurs most frequently in mild forms of the disease. Von Willer[33] and Landgraf[20], on the contrary, found it more frequently in severe cases of typhoid. Trouillier[32] quotes 54 in grave, 44 in moderate, and 17 in mild forms of the disease, while Blum cites 30 in grave, 29 in moderate, and 17 in mild forms. Two of my six died and two others were very severe forms of the disease. Their existence from the above evidence, therefore, makes a severe course of typhoid probable and suggests a guarded prognosis.

If the ulcers fail to heal, a relapse seems more probable (Fohanno[41], Devis, Trouillier[32]). The last named quotes eleven relapses in eighty-one cases, in five of which the persistence of the ulcers made the possibility of a relapse a probability.

Diagnostic Value, Time of Appearance, Differential Diagnosis. As is now well recognized, a simple sore throat of a catarrhal nature[18, 12, 42], a tonsillitis [26, 18], or a phlegmonous pharyngolaryngitis[43, 18], may usher in the early symptoms of enteric fever, but in America and in England the diagnostic value of the ulceration so frequently named for Bouveret has hardly been appreciated. In three of my six cases an erroneous diagnosis of syphilis and in one of diphtheria was made by more than one competent observer; nearly all the writers upon this condition mention such difficulty, and Curschmann[27] in particular cites diphtheria, scarlet

fever, croup and syphilis as being wrongly applied to four cases of typhoid with angina. Blum [23] and Ludin[30] have, to be sure, described the same type of ulceration accompanying tuberculosis, but the paucity of such observations detract but little from the positive diagnostic value of these ulcers of the pharynx in a febrile patient.

Most of the published cases, it is true, did not exhibit the ulcers early enough to be of striking value in the differential diagnosis of a fever in which modern laboratory methods have so nearly supplanted clinical observation. The ulcers anticipated the appearance of the rose spots, however, in the cases reported by Bonnette[36] (fourth or fifth day), by Du Costel (8 days before spots), in two of Duguet's[7] three cases, in two of the three cases reported by Lécorché and Talamon, in one of Cahn's[17] five cases, and in one of Wagner's[18] three cases. In two of my cases they preceded both the spots and a positive Widal. In most of the cases, however, the ulcers coincided with the appearance of the roseola during the second week; and although Nonat[5] claimed that they never began after the second week, Fohanno[41] cites one on the 17th, Bendix and Bickel[39] one on the 18th, and Landgraf[20] one on the 48th day of the disease.

Derignac[14] and Laségue laid some stress upon the differential diagnosis between typhoid angina and pharyngeal tuberculosis; Kussmaul at first regarded Schott's case as one of tuberculosis, but at this time the connection between these ulcers and typhoid fever was not generally known in Germany. Although they occurred in tuberculous individuals, neither Blum nor Ludin considered the ulcers in their four cases to be due to a tuberculous process, because three of them healed promptly without a scar, and because in Blum's second case the microscopical examination showed that the lesion was a simple catarrhal ulcer exactly like the histological picture of the corresponding ulceration in typhoid, and with no suspicion of any tuberculous change, caseation or tubercle formation. With modern laboratory methods a tuberculous ulcer can be promptly and accurately diagnosed as such so that we need only bear in mind the same type of simple catarrhal ulcer has been noted to accompany tuberculosis as well as typhoid. As far as scarlet fever is concerned, the enlargement of the spleen, the presence of rose spots, the absence of a leucocytosis, the relatively slow pulse, the gradual onset, and especially the serum test and the early blood culture will prevent any mistake. The same may be said of diphtheria with the addition of a prompt examination of a throat smear and culture. A differentiation of the mucous patches of secondary syphilis may be more difficult, especially if, as in my fourth case, a suspicious rash covers the body (in this case I attributed the rash to some drug administered before the patient's entrance). The absence of a primary lesion, scar or enlarged lymph nodes, the history, the onset, the eruption, the slow pulse rate, the Widal or Wassermann reaction, and an early blood culture should clear the difficulty. Besides which the location, numbers, and especially the appearance are more or less distinctive. Derignac[14] contrasts the greyish white or greyish granite of the typhoid with the whiteish opalescent porcelain-like appearance of the syphilitic ulceration. He also mentions the possibility of confusion with mercury, antimony, carbolic or salicylic poisoning, as well as a chancre, herpes, thrush, aphthae or variola. Their distinction should be readily made.

SUMMARY.

1. In enteric fever there appears not infrequently (6 to 12%), it may be before, but as a rule about the same time as the roseola, one or more small superficial ulcers, usually situated upon the anterior pillars of the fauces, the so-called typhoid angina or Bouveret's ulcer.

2. These ulcers may appear sufficiently early to be of some value in the clinical diagnosis of typhoid.

3. An appreciation of this lesion will prevent the mistaken diagnosis of syphilis, diphtheria, croup, and scarlet fever, as well as of other local lesions.

4. The ulcers are probably due to a secondary infection upon a mucous membrane altered by the existing disease.

5. Although an exactly similar lesion has been described in four cases of tuberculosis and so detracts from its credited specificity in typhoid fever, such are evidently very infrequent exceptions, lessening but little its diagnostic value.

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MEMORIAL TO MISS CLARA BARTON.

IT is announced that three memorial buildings are to be erected at Red Cross Station, Glen Echo, Md., as a monument to Miss Clara Barton, founder of the American Red Cross, who died there in April, 1911.

"There is to be a main memorial building with a frontage of 100 feet and a depth of 160 feet, which is to be an auditorium for lectures, meetings of women's clubs and a treasure house for the curios, decorations and certificates of honor conferred upon Miss Barton.

"The main auditorium building is to cost $100,000. The First Aid Building and the Nurses' Home are to cost $75,000 and $50,000 respectively.

"The main building is to be T-shaped, the front 100 feet across and 60 feet deep. Then it is to run back another 100 feet, making the total depth 160 feet. A striking feature of this auditorium is to be a recess in which a large painting of the only picture ever made of Clara Barton while in actual battlefield or hospital work is to be placed. It is being painted from a small photograph made by a relative at Havana in 1898. The rooms on the second floor in the rear are to contain the Barton curios, trophies and decorations, most of which are now in safe deposit vault in Boston. These include ninety-four certificates of honor from crowned heads and states and cities which had been aided by Miss Barton in times of great disaster.

"The First Aid Building is to be equipped with all latest appliances for surgical work and in charge of surgeons who will have in constant training teachers to be sent throughout the states. The building is to be endowed. The Nurses' Home is to contain rest rooms, library, reception hall, parlor, dining-room, kitchen and bedroom accommodations for twenty-five nurses."

SOME OF THE PROBLEMS OF PRIVATE SANATORIA FOR TUBERCULOSIS AS OBSERVED DURING TEN YEARS' EXPERIENCE IN THE POTTENGER SANATORIUM FOR DISEASES OF THE LUNGS AND THROAT.

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THE Pottenger Sanatorium for Diseases of the Lungs and Throat has just completed its tenth year. It was the writer's pleasure to conceive, build, equip, and finance, and organize this institution. He has been intimately connected with every detail of its running from the start. As medical director he has literally lived with the patients of the institution during nearly all of this period, having his home on the grounds and being intimately connected with the life of the place.

During this time there have been 1521 patients treated in the institution. The stay of these patients has varied from one day to three and one-quarter years. The majority of patients remained in the institution and were under close observation during a period of seven or eight months. This has afforded an exceptional opportunity to study both the laboratory and clinical side of tuberculosis; to acquaint oneself with every phase of its development and progress both toward dissolution and toward arrestment; to study all the various complications, tuberculous and non-tuberculous; to learn to know the patient from both a physical and psychological standpoint, and, in fact, to study every peculiarity of the disease and the patient.

Coincident with this sanatorium experience the writer has treated patients in his city office, a majority of whom were charity cases and many of whom were compelled to work during the time that they were taking treatment. This has afforded a splendid opportunity of studying the disease as it presents itself in different social conditions and of comparing methods of treating the disease under home and institutional environment. He has been led to the conclusion that the advantages which the sanatorium offer those who are able to avail themselves of it are many. The patient is isolated. He is removed from home and business with their interests and

worries. He is taken away from the influence of solicitous and other meddlesome friends. He is kept away from many of the acute respiratory infections which are common among people in the ordinary walks of life. He is placed in hygienic surroundings in the open air, such as are rarely fully obtained in the home, which raise his resisting power and help him to overcome infections should he be exposed to them. He is placed in an environment which is especially adapted to his needs, along with other people who are trying to overcome the same disease; consequently he is profiting by the moral support of many others trying to accomplish the same purpose. Another great factor is the close association with the physician. In an institution the man at the head must stand responsible for practically every act of the patient's life. He must tell him what to do, he must also see that he does it. He regulates the patient's mode of living, his hours of exercise; his hours of rest. He furnishes his food and knows what and how much he is eating. He knows his mental attitude; and, in fact, learns to know the patient intimately so that he can help him to make his fight for life in every way possible.

Where the patient must be treated in the home, on the other hand, there are many difficulties. He is compelled to associate with people who are well, and he must necessarily, to a greater or lesser extent, adapt himself to their environment. He is often discouraged in doing the things he should do and encouraged to do the things he should not do. He is constantly annoyed by solicitous friends. The physician, not being near where he can be consulted, the patient is advised by the neighbors and friends who see him and he is often compelled not only to fight his disease, but his friends as well. His food cannot be so well controlled; his hours of rest and exercise are more apt to be disturbed and his surroundings, as a rule, are less hygienic. He fails to have the help derived from an intimate association with his physician. He sees the physician in his office or when he calls, two or three times a week; at other times he is compelled to fight his own battles.

One of the most serious problems in the treatment of tuberculosis is keeping up the patient's interest long enough for him to get well. Tuberculosis is a chronic disease which develops slowly, taking years probably, as a rule, in reaching the clinical stage. It also takes a long time to cure it. During a great portion of this time the patient feels fairly well; at other periods he feels depressed and discouraged. The physician must curb his enthusiasm during the periods when he is feeling well and must supply him with encouragement and optimism during the periods of depression.

It is extremely trying for the physician to face the same patient day after day, week after week, month after month, during a period of one, two or three years, as is sometimes necessary in the treatment of tuberculosis, and still hold the patient's interest, respect and confidence. This is one of the most serious difficulties in treating the disease. There are few men in medicine who are really fitted either by nature or by training to treat tuberculosis. It requires a special type of man. As a first requisite he should have an excellent training and a wide experience in general medicine, for he will have most of the problems of internal medicine to solve. He must be one capable of appreciating and caring for detail, one with an inexhaustible store of patience, an unlimited optimism, yet one which is tempered by knowledge and judgment. He should not set himself on a high pinnacle, simply because he is head; he should be in sympathy with his patients; he should study the peculiarities of his patients as individuals, also the peculiar psychological characteristics produced by the disease; he should recognize the difficulties with which the cure of tuberculosis is surrounded from the pathological standpoint and also the meaning of the struggle, sacrifices and deprivations which the patient is compelled to make in order to attain a cure. He should be a man of firmness, but his firmness should be tempered with a broad and intelligent sympathy.

The difficulties encountered in conducting an institution for the tuberculous are many. Some of them are inherent in the disease itself; some are on the side of the patient, and many of them on the part of the institution itself. One great difficulty is to fill the positions in an institution, particularly the responsible ones, with people who are capable of taking a broad view and who are in sympathy with their work. Tuberculous patients are much like children,—they are easily angered, they are easily pacified. Those at the head of departments must remember that they are dealing with the sick and consequently they must have charity in dealing with them. On the other hand, the patient must learn that his personal ideas and personal whims must give

away to the better judgment of those who are in charge and that he must adapt himself to the institution instead of expecting the institution to adapt itself to him. He must further be charitable, knowing that he himself is not perfect. He must not expect perfection in an institution made up of a great many assistants and employees.

There are two methods of running an institution. One is by military discipline, and the other by considering the entire community as a family and expecting mutual regard and support.

There must necessarily be certain rules that must be lived up to rigidly; but in the private institution, where the result in the individual case is the thing to be attained and hoped for, most of the rules must be somewhat elastic. The patient must be taken as an individual with an individual mind and individual temperament; and it is the province of those in authority to work with that mind and temperament and mould it into obedience. Personally, I prefer the family spirit. It is the one that has sway in my institution. I have endeavored to secure the coöperation of the patient through a sense of duty to himself and friends and to the other patients; and through a respect for but not fear of, those in authority. I believe in a spirit of frankness in dealing with the patient and a willingness to explain and talk over difficulties. A heart-to-heart talk often secures coöperation where military discipline would call for expulsion. I prefer the plan where the patients look upon those in authority as their friends rather than as their masters. This engenders a good, friendly, helpful spirit and the patient feels that he is being guided by someone who understands him and is in sympathy with him. During ten years' experience in sanatorium work, I have only expelled four patients from the institution. At times, it seemed an injustice to myself to allow others to remain, yet patience finally secured coöperation and a stable state of affairs. Excellent results have been obtained where military dicipline would have expelled the patient.

The patients who enter an institution belong to three classes. The first comprises the great majority of patients and consists of those who want to do what is right, who are conscientious and earnest in their desire to get well. To be sure these, at times, fall from grace; but most of the time they are working conscientiously for recovery. Then, there is a small class, probably about twenty per cent., who have no well defined principles, but who are willing to be conscientious if they fall in with the conscientious class, and who are just as willing to be insincere if they are led that way. Then there is still a small number, less than five per cent., who are vicious, willful and unfaithful to themselves and all with whom they come in contact. This class, however, can often be controlled by patience and firmness. It is important to recognize those of this class early and upon the first refraction of a rule let them understand that the offense must not be repeated. The patient must be given to understand that he requires the service of the institution more than the institution needs him; that, while the institution has little to gain by his presence, he has a life at stake.

There is a general belief that there are many people who for one reason or another, particularly because of lonesomeness, or through the depressing influences of other sick people, cannot undergo sanatorium treatment. This is incorrect. It is not necessary that a sanatorium should be either lonesome or depressing. I have seen only three or four patients in my institutional experience who apparently could not adjust themselves to the institution; and, as might be expected, these particular patients would not adjust themselves to any régime. They were not willing to make the struggle or sacrifices necessary to get well. Whether or not an individual will undergo sanatorium treatment depends largely on the manner in which the question is presented to him. If he desires to get well and is impressed with the seriousness of the disease and the advantage of institutional treatment, he will nearly always adopt this policy if it lies within his power. He will usually be willing to sacrifice personal likes and comforts temporarily that he may recover his health. If unwilling to do this, as a rule, it is an indication that he will not be a patient who can be trusted for a whole hearted coöperation during a protracted convalescence.

It is a great mistake for physicians to tell patients that they are not sick enough to go to a sanatorium or that they should not go there because of the danger of becoming infected. There is never a time too early for treatment to begin and there is no place where less danger of infection exists than in a properly-conducted sanatorium. The importance of early treatment cannot be better emphasized than by the results

which we have obtained in the past ten years, which are as follows:

	First Stage.	Second Stage.	Third Stage.
Apparently cured and arrested	97%	81%	38%
Improved	3%	14%	40%
Unimproved or died		5%	22%

The above results are far more eloquent than any comment could be in the plea for the early treatment of this disease. These results are tabulated according to the original definition of apparently cured and arrested. When the physician advises his patient not to undergo treatment early but to wait, he is taking upon himself the responsibility of advising him to wait until the disease has passed from the stage where 97 per cent. can be apparently cured or arrested to where 81 per cent. or 38 per cent. can be apparently cured and arrested.

The private sanatorium differs from those of the public and partly endowed class.

The tuberculosis problem is mainly connected with the poor but not wholly so, for the disease is found in all walks of life. It permeates every stratum of society; and, in our solution of its problems, we must make provision for fighting it along all classes.

We must recognize that it is most common among the poor and it is to this class that social workers and economists must direct their greatest efforts. The problem here is also greater because of the conditions under which these people live and work, also because of their helplessness and inability to care for themselves and their families during a long siege of illness such as that produced by tuberculosis.

In our warfare against this disease, however, we must not forget those who are not dependent. There are many people who are not wholly helpless but who are able to pay their way in part. Those deserve as careful consideration as the helpless and every precaution should be taken to prevent the spread of the disease among them, and every opportunity for cure should be offered them that is offered to those who are wholly dependent. Then, there is a third class made up of those who are wholly able to pay their way; who, in spite of means and opportunity to live in hygienic surroundings will, at times, develop this disease. The problem of the prevention and cure of tuberculosis must include these, the same as it does the others. The cure of these lies wholly in the province of the private sanatorium. The problem of handling these three different classes is the same in general, but different in detail. There is no hard and fast line separating these three classes, yet an acquaintance with the patient will usually determine to which class he belongs. It is just as wrong to pauperize the two upper classes by giving them free treatment as it is to compel the dependent to pay for their cure.

The position of the private sanatorium in the warfare against tuberculosis is misunderstood both by laymen and physicians. It is sometimes criticised where a greater knowledge of its real function would call for praise. If there is reason for the existence of private hospitals of any kind, general or special; or if there is reason for the existence of private physicians, there is the same reason for the existence of private sanatoria for the treatment of tuberculosis. The sanatorium is simply the man at the head with enlarged opportunities. The only rational excuse for the existence of a private sanatorium is for some man who is expert in treating the disease to thus have a better and larger opportunity to give his services to those who are in need of them. The private sanatorium for tuberculosis the same as the partially endowed and wholly charitable institution is in harmony with the fact that has been thoroughly established in modern medicine, that institutional treatment is the best treatment for practically all diseases.

The sanatorium problem in many particulars differs in no wise from the general problems of medicine. The institution should be governed by the same rules of ethical conduct and should be conducted on the same line of high scientific standards as holds in private practice. The sanatorium differs, however, in that it occupies a conspicuous place and is open to comment, favorable and unfavorable by the public at large, which the private practitioners largely escape. It is patent to all that it is a genuine success, that it is barely making a go, or that it is failing; and accordingly it is looked upon with admiration, even jealousy, indifference or contempt.

The private sanatorium is the most difficult type of institution to conduct. In a charitable institution the undesirable patient can always be discharged. In partly endowed institutions the patient knows that he is getting more than his money could otherwise purchase and he must of necessity be fairly well satisfied. The patient in the private sanatorium, on the other hand, must be taken as he is and dealt with tactfully. He must be made to overcome his whims and educate his tastes so that he will put himself in harmony with the institution and coöperate with the physicians in his cure, and make himself comfortable and contented long enough to get well. This is often an extremely difficult thing to do. It is much more difficult for the physician in an institution than it is for the one in private practice, because in private practice

the doctor sees the patient once a day, or once every few days and there his responsibility virtually ends. In an institution, on the other hand, the responsibility of the entire life of the patient is upon him. The physician must guide him in his every act; he must tell him what to do and see that he does it. He must not only deal with the patient and his peculiarities himself; but the tact or lack of tact employed by all of his assistants and subordinates eventually reflects upon him.

One of the serious problems in the private sanatorium and, for that matter, in all sanatoria, is the question of finding occupation for the patients. There are so few games and sports that the average patient can enter into advantageously that it forces those in authority to keep the patients happy and contented without employing the usual forms of diversion. Where the patients are in the earlier stages, croquet, photography, chess, checkers, cards, walking, and a certain amount of driving can be permitted. When the patients are in the more advanced stages of the disease, even these must be denied. No game must be entered into by the tuberculous patient that he cannot quit at any time should it be wearing upon him. It is an unfortunate but well recognized fact that as soon as patients get to the place where they are permitted to do much driving or engage in very vigorous sports they at once begin to overrate their strength and underrate the desirability and the necessity of further treatment. They lose interest in the cure. The old adage of giving an inch and taking an ell is all too true of the tuberculous patient. This pitfall must always be guarded against. The best way of helping a patient to occupy his time in the sanatorium is by breaking up his day and having some little thing in treatment carried out at intervals during the entire day! In the institution with which I have been connected we have taken this into consideration and planned rather a continuous program.

Quoting from a former paper, "The Tuberculosis Sanatorium and What It Stands For," (*Monthly Cyclopedia and Medical Bulletin*, April, 1911):

"Success in the treatment of tuberculosis depends on keeping the patient cheerful, optimistic, and interested in his own cure. To this end he must be kept busy, not busy working, for this is not consistent with the best treatment; but the day's program must be so arranged as to leave little time at his own disposal. Probably I can best illustrate what I mean by keeping the patient busy by describing the usual routine in our own institution:

The patient's day begins at 7.00 o'clock in the morning, at which time the nurse calls to waken him and carry out any regular orders given by the physicians. The patient arises and takes a cold sponge bath, or, if he is not in condition to take it himself, it is given him by the nurse.

At 7.30 the medical director begins his daily rounds and continues until he has visited each bed patient. These visits are made in company with the assistant physician who has charge of the individual case. The condition of each patient is carefully noted, and the plan of treatment for the day agreed upon.

At 8.00 o'clock breakfast is served, all patients who are able to be up and around going to the dining room. Those who are confined to bed are served in their rooms and bungalows. After breakfast each ambulant patient reports to the medical director for consultation. If any special treatment is needed he is referred to the assistant physician having charge of the case. All who are suffering from local complications, as of the ear, throat, or nose, are also treated at this time.

On one day of each week, between 10.00 and 11.00 o'clock the patients are weighed by one of the staff.

During the time between 9.00 and 1.00 o'clock the nurses are busy carrying out the physicians' orders and looking after the wants of the patients, devoting most of their time to those confined to bed.

From the time that the patients are through with their treatments until 1.00 o'clock, they while away the time in croquet or other allowable games, in visiting friends, and doing little things of a personal nature, and in exercising as prescribed by the medical staff.

The medical director, aided by the assistant physicians, makes a careful examination of each patient monthly, charting the chest so as to note the changes in the tuberculous process. These examinations are made between 10.00 and 1.00 o'clock.

Lunch is served from 1.00 until 2.00 o'clock. From 2.00 to 4.00 o'clock are rest hours, during which time all the patients recline in their rooms and bungalows, and are instructed to rest, to sleep, if possible, providing it does not interfere with their sleep at night.

At 4.00 o'clock the nurses begin their rounds, carrying out the physicians' orders and attending to the wants of the patients. The assistant physicians make calls upon each bed patient in their respective service and any ambulant patients who are not feeling well, and administer any special treatments that are required. They likewise prescribe for any new symptoms or complications that may have arisen since the morning visit.

From 6.00 to 7.00 o'clock dinner is served. After dinner the patients usually amuse themselves by reading or games until bed time. Bed patients, as a rule, go to sleep about 8 or 8.30, and all are required to be in bed with lights out by 9.15.

This aggressive plan of treatment requires an efficient corps of attendants. I think one of the greatest mistakes that is usually made in a sana-

torium is attempting to run it with too small a number of medical attendants. The sanatorium should stand for results. Results in tuberculosis are only obtained by keeping the patient interested. The patient can only be kept interested by association with and receiving encouragement from those who know. To this end a corps of medical men, sufficient in number to look carefully after the wants of all patients is essential.

In this short paper I have endeavored to take up some of the important questions bearing upon the sanatorium treatment of tuberculosis which are usually omitted from discussion. I have endeavored to show the relationship which the private sanatorium bears to the public on the one hand, and the members of the medical profession on the other; I have further attempted to show the true relationship which should exist between the patient body and the medical staff and other attendants; thus pointing out the true place of the private sanatorium in the warfare against tuberculosis.

ROCKEFELLER INTERNATIONAL HEALTH COMMISSION AND THE WORLDWIDE ERADICATION OF HOOKWORM DISEASE.

MR. WICKLIFF ROSE, director-general of the International Health Commission of the Rockefeller Foundation, has recently returned to Washington, D. C., from a trip on which he investigated the distribution of hookworm disease throughout the tropics. The commission has issued a statement describing his observations and its plans for the worldwide eradication of uncinariasis.

"In Egypt Mr. Rose found Lord Kitchener keenly interested in the work and eager to have the coöperation of the commission in a systematic campaign against the disease. Measures against hookworm disease were instituted in Egypt by the medical missionaries some fifteen or sixteen years ago, and more recently the government has undertaken the work in certain localities. Now that the International Health Commission has agreed to lend its coöperation, the work will begin on a much larger scale. The disease is extremely prevalent and of tremendous importance in lowering the vitality of the people.

"Journeying eastward, Mr. Rose visited Ceylon, Malaysia and the Philippine Islands, where he studied the existence of the disease and conferred with authorities concerning measures for its control. Returning by the Pacific route he had an opportunity to secure information about the existence of hookworm infection in China, Japan and Korea.

"In British Guiana an intensive campaign is being undertaken in the Peters Hall District, which has been divided for convenience into three sanitary districts. In one of these districts every person has been examined for hookworm disease; more than fifty per cent. were found to be infected; all of those infected have been placed on treatment; and a second microscopic examination is now being made of persons treated in order to determine the results of the work. In the second of these districts the work of examining all the inhabitants is well under way, and practically complete."

THE DEVELOPMENT OF MODERN ARTIFICIAL PNEUMOTHORAX.

A BRIEF SKETCH OF FORLANINI.—LIMITATIONS AND POSSIBILITY OF THE TREATMENT.—REMARKS ON THE TECHNIC.

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PROFESSOR CARLO FORLANINI, the originator of the modern method of artificial pneumothorax, was born in Milan, Italy, June 11, 1847. He completed his medical course at the University of Pavia from which he graduated in 1870. From 1871 to 1884 he was first an assistant physician and later an associate in medicine at the Ospedale Maggiore of Milan. In 1881 he was appointed chief of the dermatological department in the same hospital. In 1884 he was appointed professor of clinical medicine in the University of Pavia.

He was a student of Mantegazza, a friend and companion of Bizzozero and Golgi, and was among the first to understand the importance of the experimental method, and the necessity of applying it to the field of clinical medicine. All his works show his love for truth and for clear and skillful research, and are a clear interpretation of the observed facts.

In looking at the numerous contributions one is surprised at the number and variety of subjects to which he applied his activity. There are studies and researches in anatomy, histology, experimental pathology, ophthalmology, dermatology and internal medicine, notes on therapeutics, especially aero-therapeutics and mechano-therapeutics, all forming a series of valuable contributions to medical science.

The study with which Forlanini's name is especially bound is the artificial pneumothorax treatment of phthisis. He first suggested treating certain forms of pulmonary tuberculosis by artificial pneumothorax in 1882, and has been its most persistent advocate ever since. Between 1882 and 1894 he made many experiments on the immobilization of the lung, both in animals and human beings. In 1895 before the Italian Congress of Internal medicine he reported the first clinical cure of an advanced case of unilateral pulmonary tuberculosis. This was a case that had developed a spontaneous pneumothorax. Forlanini simply maintained the pneumothorax complete by frequent injections of nitrogen. No other report was made by him on this method of treatment until 1906, although he carried on the work both in his clinics at the San Giovanni Hospital in Turin and at the University of Pavia, and in his private practice. Since 1906 he has given us some of the most valuable contributions on the subject.

In 1898 Murphy of Chicago reported five cases. The next year Lemke reported fifty-three cases. The technic was unlike Forlanini's. Murphy used the incision method and introduced into the pleural cavity large quantities of nitrogen, in amounts ranging from 1200 cc. to 4500 cc., repeating the injections after two or three weeks. Neither Forlanini's nor Murphy's technic was such as to inspire confidence and both were not devoid of serious danger to life. In Italy, no one took up the work outside of Forlanini's clinic and in America it had no enthusiastic followers after Lemke died, outside of Harris and Mary Lapham. It was not until Brauer and Spengler took up the work following Murphy's technic and published their brilliant work in 1906 that any marked attention was given to the treatment of phthisis by artificial pneumothorax.

A further important step was made by Saugman in adding a manometer to the apparatus to denote when the point of the needle was in the pleural cavity. By the addition of the Roentgen ray, artificial pneumothorax treatment has reached its present position of safety. Now every civilized country has its adherents, nearly all following Forlanini's puncture method. At the International Tuberculosis Congress held in Rome in 1912 it was the chief subject of discussion, and an international association was formed to keep the workers in this field in closer touch with each other.

The literature on this subject at present embraces over 600 articles. The leading contributions are from Italian, German and French clinicians. With the exception of Murphy's and Lemke's articles in 1898-99, only in the last few years have valuable contributions been made by American and English clinicians. The tenor of all these reports is favorable. Considering the large number of cases treated, few clinical recoveries have been reported. Still one must bear in mind that the treatment has been undertaken in almost all of the cases as a last resort; also that the method is naturally limited to unilateral cases or to cases with slight involvement of the better lung. A fair estimate of the patients suitable for artificial pneumothorax according to the present accepted indications may be gathered from the following observations.

Volhard found 56 suitable cases out of 789 patients examined. Burnand found 23 out of 628 patients. Keller attempted it in 40 out of 583 patients examined. During my six months' service in the out-patient clinic of the Massachusetts General Hospital, out of 100 tuberculous patients examined in the general clinic only five would have been suitable for artificial pneumothorax. From my series of 64 cases treated by pneumothorax, in only 23 was a complete collapse possible. In many cases attempted the practical value of pneumothorax is limited on account of the impossibility of creating a pneumothorax of sufficient therapeutic value. This is due to partial or complete adhesions, cicatrized or indurated lung which cannot be compressed, and to severe lesions in the "better lung."

THE MANOMETER.

It is worth repeating here that the manometer may show respiratory oscillations of three kinds: Negative, even (namely the excursions on the manometer are equal on inspiration and expiration) and positive.

1. Negative respiratory oscillations always mean that the point of the needle is in the pleural cavity.

2. Even respiratory oscillations at a primary injection mean that the point of the needle is beyond the pleural cavity, *i.e.* in lung. No matter how much nitrogen is introduced under these conditions, the oscillations will vary but slightly.

3. Positive respiratory oscillations indicate that the point of the needle is either in a pocket of gas, a complete pneumothorax, or a hydropneumothorax; under these conditions the pressure becomes higher on the introduction of a very small amount of nitrogen.

4. At a secondary injection when a pleural effusion has formed, the point of the needle may be in the pleural cavity and the manometer may show only slight or feeble respiratory oscillations slightly negative or markedly negative in character. Or there may be simply a negative rise on inspiration, with no oscillations whatever. Under these conditions, when the needle is removed a drop of fluid may be observed on the end of the needle especially if the stylet is passed through its lumen.

If the point of the needle is in a blood vessel only a rising pressure will be noted.

VALUE OF ROENTGEN FLUOROSCOPIC AND PLATE EXAMINATION.

Before the induction of an artificial pneumothorax is attempted, whenever possible, a Roentgen examination of the chest should be made, both fluoroscopic and plate. It shows the precise topography of the lesions, and any enlargements of the larger blood vessels. A preliminary plate and fluoroscopic examination is advisable before instituting pneumothorax treatment. Not only can the extent of the tuberculous process in both lungs be determined more exactly than by physical signs, but also the presence of adhesions to the diaphragm and the costo-phrenic sinus can be demonstrated. It is of especial value after the first few insufflations, because it shows clearly just what has been accomplished and in just what manner the lung is being collapsed: 150 cc. of nitrogen injected into the pleural cavity will show a distinct outline; 1000 cc. will show the lung approximately half collapsed.

The pressure readings of the manometer alone are not sufficient to inform one of the degree of lung collapse, nor are percussion and auscultation at all times sufficient. The Roentgen rays

are the most precise and accurate means at our command not only to show in what manner the lung is collapsed but also to tell us how much the mediastinum and heart are displaced.

In the absence of adhesions, the lung is seen to be uniformly compressed around the hilus, and the pneumothoracic cavity sharply defined. Variations from this normal disposition of the pneumothorax are due to various causes: viz: Pleural adhesions, which are the most frequent; large cavities encapsulated in fibrous tissue, which permit one part of the lung to collapse more than another part; calcified areas, which are incompressible; and fibroid changes which are also incompressible.

Pleural adhesions are well defined and attempts to inject nitrogen into an adherent pleura must be made with great care. If the pneumothorax increases (which will be shown by the extent of the manometer's excursions) careful introduction of small quantities of nitrogen may be continued. Pleural adhesions appear either as single bands running from the lung to the thoracic wall, or as a net-work of such bands. Adhesions have been noted most frequently in the upper lobe.

When the pleural cavity is free, the collapsed lung appears to be a homogeneous mass. In one case the lobes were plainly discernible. Where adhesions exist, their length, form and distribution are readily ascertained. Case 12 showed the lung held in the center by a thick adhesion, which prevented a complete collapse posteriorly. Subsequent plates showed that this adhesion was decreasing and the collapse increasing, but it was impossible to effect a complete collapse.

The plate in Case 31 showed a net work of adhesions to the superior lobe, which, however, did not prevent a satisfactory compression. In Case 32 the pleura was adherent posteriorly and three bands extended from the superior lobe, thus preventing a good collapse. In this case it was impossible to secure a complete compression of the superior lobe which contained the cavity. In Case 21 (a lung abscess), the lung collapsed in an almost semicircular shape with the concavity outward, as a result of adhesions from the upper portion of the superior lobe and from the tip of the lower lobe. In Case 8 a small portion of the upper lobe was found to be adherent. In Case 20, the left lung showed a wholly adherent superior lobe, a condition that remained wholly unaffected by the injections. The activity in the process of the superior lobe continued unchecked although considerable relief in the symptoms was obtained. In Case 25 a similar adherence was found at the base of the right lung. In one case the lung was irregularly compressed and bands of adhesions from different parts of the lung were visible. This resulted in the formation of pockets of gas and sufficient collapse was obtained in this case to obtain marked symptomatic relief. The sputum was diminished from one-half cup to a teaspoonful in twenty-four hours, with only a little cough in the morning and improvement in the general condition. These adhesions varied from very thick bands to mere threads.

These examples of abnormality are cited to show the value of the Roentgen examination. It helps in the selection of the proper place for the injection; it shows more accurately than physical examination the exact progress of the lung collapse, and the rate of gas absorption; it also shows whether the gas was actually introduced into the pleural sac or not.

The fluoroscope is invaluable in detecting an effusion in its very incipiency. Small amounts of fluid will be discovered by its rise before the physical signs or even the Roentgen plate can show any definite evidence.

COMPLICATIONS.

An operator who has a thorough knowledge of the technic and has made a proper selection of cases will not meet with any serious immediate accidents. Gas embolism ought to be avoided and the so-called "pleural reflex" will rarely be met with if novocaine-adrenalin is used as a local anesthetic.

Spontaneous pneumothorax from rupture of an adhesion is possible from too high a pressure; also rupture of the mediastinum. Pain in the chest from increased tension and cough can be controlled. Dyspnea from reduced respiratory area or cardiac embarrassment may become an urgent symptom requiring the withdrawal of nitrogen to relieve it.

A febrile reaction usually follows an injection, lasting a short time. There is usually a loss of weight during the treatment; or the weight may remain stationary. In the favorable cases, in the absence of complications, the gain in weight on the re-expansion of a collapsed lung is very marked.

Of the later complications, pleural effusions will be met with in about 50% of the advanced cases where a partial or complete collapse can be obtained. Once an effusion has made its appearance, there is always present the danger of its becoming infected at a subsequent injection. The question of removal of the fluid depends on its effects. A serous effusion which does not aggravate the patient's condition is best left alone. If the patient's general condition is affected, the effusion should be aspirated and lung collapse maintained by nitrogen insufflations. Patients with serous effusion should be carefully watched. Frequent fluoroscopic examinations should be made, as the gas may suddenly absorb, the lung re-expand, and then further treatment will be impossible on account of the gluing together of the pleural surfaces.

A serous effusion may become purulent. This has happened in two of my cases. One I will discuss in another paper. The other (Case 8 of my series), has had pulmonary tuberculosis for

ten years. The disease was slowly progressing when he first came under pneumothorax treatment three years ago. He had an extensive infiltration of the left lung with a small cavity between the third and fourth ribs. Slight infiltration of right upper lobe. One year after instituting treatment a serous effusion developed with stormy onset. In two weeks the symptoms subsided; then gradually improved. Compression was maintained by the injection of nitrogen every two weeks. Collapse was only partial on account of adherent apex. The fluid aspirated and examined by Prof. Wolbach had all the character of a tuberculous serous effusion and tubercle bacilli were found. A year later this effusion became purulent. No other organisms as yet have been found in the pus except tubercle bacilli. The pus was aspirated and replaced by nitrogen, but the last time this was done the pus was forced, by coughing, along the site of puncture and formed a cold abscess (?) which is tender to touch. I do not like to tamper with this patient very much.

Whenever during treatment the condition of the non-collapsed lung becomes aggravated, the nitrogen insufflations should be suspended. It may even become advisable to extract some of the nitrogen so as to favor re-expansion. I have done so in one of my cases because of hemoptysis. The non-collapsed lung should be carefully watched. No one can tell for a certainty what the effect of the increased work thrown upon it may be.

Once the lung has re-expanded the pleural surfaces coming into contact adhere, preventing a further collapse of that lung. This is very important, for the lung must not be allowed to re-expand prematurely. The time to keep the lung collapsed varies with each individual case, depending on the extent and character of the lesions. It is better to err on the side of keeping the lung collapsed for a longer rather than a shorter time. Anatomical healing takes place slowly. As a rule at least a year is necessary. When a patient has been free from symptoms four or five months, we may allow re-expansion to take place. If while re-expanding there should be a return of the symptoms from the compressed lung, treatment should be immediately resumed.

The healed, compressed lung when re-expanded takes up its normal functions again and is capable of carrying on the necessary respiratory exchange even alone. The following is an extreme case illustrating this.

Forlanini drew out the nitrogen from the left side in a case where the left lung had been maintained collapsed for seven years, and this aided re-expansion. He then instituted a pneumothorax on the right. It was a very delicate procedure and of doubtful result. The outcome was beyond his expectation. In about 38 days the right lung was collapsed—the left lung had been practically wholly re-expanded; there was no evidence of recent disease, but a pleural friction sound could be heard from the apex to the base. Respiration 24-26. The patient was in fairly good condition and improving. A lung can thus be maintained compressed for a long time and on re-expansion can alone carry on the necessary respiratory function. The healthy tissue does not appear to be destroyed by the long compression.

If the late or remote results are uncertain, the immediate results are striking. All operators are in accord as to the effects on temperature, control of hemoptysis, diminution and cessation of sputum, control of cough, and in some cases disappearance of tubercle bacilli. In other words, one can obtain symptomatic relief, but this may not always be lasting. Still, we can gain time, a few weeks, months or a few years, and an occasional clinical recovery. This is the actual value of artificial pneumothorax in the advanced cases.

The extension of the indications of this form of treatment is still difficult to give. Its field may be broadened to that large class of moderately advanced cases, perhaps even to certain incipient cases, which the experienced clinician knows would otherwise do badly.

It has been my experience that the second stage cases are less likely to develop a pleural effusion than advanced cases, and the proportion of failures in finding a free pleural cavity will be consideraby smaller. No case, so long as it is progressive in character, can be regarded as too early for treatment. Sudden hemoptysis must be regarded as evidence of progressive disease from the standpoint of artificial pneumothorax treatment. In Case 61 of my series, the only symptoms were listlessness and a sudden hemoptysis which nearly killed the patient. This last attack had been his sixth in the course of a year. Between attacks he was in excellent health, having no cough, sputum or fever. The physical signs in the chest were very slight in comparison with the severe hemoptysis. There was slightly increased dullness in the right upper lobe, increased tacticle and vocal fremitus, and broncho vesicular respiration. No râles. Left chest apparently normal. X-ray examination showed an infiltration of the right upper lobe with peribronchial thickening. Left chest apparently normal. We deemed this an opportune case for artificial pneumothorax. The pneumothorax has not disturbed him in the least, and he is up and about, driving an automobile. Meantime he sleeps out of doors and has improved in strength and weight under treatment. The pneumothorax will be maintained for not less than six months.

In the non-tuberculous cases such as early bronchiectasis and certain cases of lung abscess, it ought to be attempted.

In two cases of bronchiectasis, of my series, there was compete recovery in one and symptomatic relief in the other. In the latter, the abscess could only be partially collapsed.

In two lung abscess cases, complete recovery

was obtained in one and very little benefit in the other.

Bronchiectasis dating from childhood, as in case 59 of my series, will not be cured by artificial pneumothorax on account of the pathological changes that have taken place. But it may later enable the patient to withstand the strain of a more severe operation such as rib resection.

Success in the treatment will depend on the manner in which the pneumothorax is produced and maintained. It is best to produce the pneumothorax gradually by frequent injections of nitrogen, and bring it slowly up to the desired volume and pressure. The rapid production of a pneumothorax by large quantities of nitrogen is dangerous as it does not give the adjacent organs time to adjust themselves to the changed conditions; besides the expulsion or sudden evacuation of large quantities of purulent matter may infect the sound lung. The only exception to this is in unilateral hemoptysis where it is desired to control the hemorrhage quickly.

It is essential to have a free pleural cavity or one that can be made sufficiently free by subsequent injections to allow complete collapse of the lung.

The other organs must be in such a condition as to be able to withstand the extra work thrown upon them.

The patient ought to follow sanatorium régime treatment at the same time.

The physician must have complete control of the patient.

Frequent x-ray examinations are essential for the treatment.

Artificial pneumothorax is not an indifferent procedure and should be undertaken only after careful consideration of each individual case. The patient should be fully informed that the treatment is long, tedious, troublesome and expensive and not devoid of dangers.

PYLORECTOMY FOR ULCER.

BY P. E. TRUESDALE, M.D., FALL RIVER, MASS.

THE treatment of gastric and duodenal ulcer is still a subject of controversy. It is obvious, nevertheless, that internist and surgeon by cooperative study and effort are approaching an attitude of harmony in dealing with this disease. Laboratory evidence has had a potent influence in molding present opinions. From the physiologist, the pathologist and the roentgenologist have come contributions of epoch-making importance, and the final analysis will depend much upon the continued zeal and product of their laboratories.

Hartmann[1] of Paris at the recent International Congress commented upon the present situation in the following manner: "The surgical treatment of gastric and duodenal ulcer must not be opposed to the medical treatment, the first is only the frequently necessary complement of the second. The real results observed at a lapse of time of the medical treatment are far from being as good as was formerly supposed, without speaking of serious complications, such as hemorrhage, perforation and stenosis, which are indisputably urgent surgical indications, we consider that all ulcers (gastric and duodenal) showing resistance to medical treatment belong to the surgeon." So that, out of recent deliberations has come a fair degree of unanimity, placing the treatment of ulcer in its early manifestations within the province of the internist, and assigning to surgery the chronic ulcer which has failed to respond permanently after a reasonable period of medical treatment. Rodman[2] mentions Leube, the most optimistic of medical men, as insisting that the medical treatment in chronic ulcer should not be persisted in longer than a period of four weeks.

Inasmuch, therefore, as the treatment of chronic, intractable ulcer of the stomach or duodenum is assigned to the surgeon, the choice of operation becomes a problem of extreme importance. One may reasonably assume that the perfect operation has not yet been demonstrated. The fairly frequent and recent changes in technic offer ample evidence of this fact. To illustrate the different methods employed by eminent authorities, one may cite the work of Paterson[3] of London and Mayo[4] of America. Paterson invariably does anterior gastrojejunostomy and favors no sort of intervention at the pylorus or with the ulcer site, while Mayo has long since abandoned the anterior operation for his own more generally accepted modification of Woelfler and Von Hecker's posterior, no-loop gastrojejunostomy. He now makes the anastomotic opening directly beneath the cardiac orifice extending from the lesser curvature a little to the right of the incisura angularis, and passing vertically oblique to the left. Mayo, furthermore, as a rule infolds or excises the ulcer.

At present there are essentially two methods of dealing with ulcer of the stomach or duodenum. One may be called the indirect method, by gastroenterostomy alone. The other the direct method by excision of the ulcer and gastroenterostomy or end-to-end anastomosis. Finney's[5] operation affords the best opportunity to execute the direct method whenever the pylorus is readily accessible and not fixed by adhesions.

Inasmuch as the development of cancer on duodenal ulcer is extremely rare, simple inversion by suture is here generally considered sufficient, while carcinomatous degeneration of ulcer in the pyloric zone is known to occur with such frequency that failure to excise the ulcer-bearing area after gastroenterostomy would now appear to be inexcusable. E. Payr[6] contends that callous ulcers of the stomach should be resected every time that the general condition of the pa-

tient allows it, especially when it is a question of a small ulcer, situated at a distance from the pylorus on the lesser curvature, and on the posterior surface. Other considerations than that of malignant degeneration of the ulcer will undoubtedly, hereafter, influence a modification of the indirect operation alone. The ultimate influence of gastroenterostomy when the ulcer has healed sufficiently to allow a restoration of the function of the pylorus, must be taken into account. A small stoma will functionate satisfactorily when the pylorus is occluded, but it requires a very large artificial opening to act at all in the presence of a patent pylorus. Surgeons universally agree that their most satisfactory end results from gastroenterostomy have been achieved in the most aggravated forms of pyloric obstruction. Therefore, while it is usually desirable that obstruction of the pylorus from the disease remain permanent after gastroenterostomy, it is pertinent here to mention the amazing effect of gastroenterostomy upon large, indurated and engorged ulcers, especially at the pylorus. This result upon the inflamed area can only be fully appreciated by a direct view of the pyloric region a week or more after operation. It was our good fortune to have this opportunity in Case 1, eleven days after doing a posterior gastrojejunostomy. The inflammatory mass at the pylorus, in this short space of time, had subsided to an amazing extent, yet the degree of its fixation remained unchanged. This improvement was undoubtedly the result of reduction of the hyperacidity and removal of all mechanical irritation.

Gastric or duodenal ulcer may be cured by the indirect operation alone, but usually it is not. On the contrary, it often remains with all its potential properties unchanged. Perforation, hemorrhage, adhesions and malignant degeneration are not unknown after apparently successful gastroenterostomy. Rodman[7] reminds us of fatal cases of hemorrhage from ulcer after gastroenterostomy by Mayo, Deaver, Kocher, Robeson, Connell, Czerney and others: von Eiselsberg losing three cases and Kort two. In our clinic we have had one death from hemorrhage from the ulcer after a perfectly healed gastrojejunostomy. This condition was demonstrated at post-mortem examination.

Occasionally the uncured ulcer plus a troublesome stoma, when they do co-exist, present a surgical problem of great intricacy. Ample material is being furnished roentgenologists to study end results after gastroenterostomy in patients who have not remained well. Interference with the motility of the stomach, dilatation and distortion of the duodenum and peptic ulcer they have already demonstrated. A more precise knowledge of the causes of these late consequences will soon be forthcoming, but it is already apparent that the restoration of the function of the pylorus, in the presence of an artificial stoma may result in an interference with the motility of the stomach, duodenum and jejunal handle to a marked degree. One of our cases recently demonstrated this abnormality. Gastrojejunostomy was done in June, 1913, for duodenal ulcer in a man aged 46. He remained well for four months. Afterward he had marked symptoms of disturbed motility with loss of 10 pounds in six months. Dr. Dodd's fluoroscopic observations in this case, confirmed by a series of plates, were as follows: "Bismuth was seen to leave through the stoma and also through the duodenum. A loop of jejunum seemed to be filled with bismuth. A very small dense mass was seen to leave the stoma and stay in the jejunum for quite a few minutes. It went back and forth in the loop of the jejunum." Operation revealed the pylorus involved in a mass of adhesions and adherent to the liver, gall bladder and parietal peritoneum. The gastroenterostomy opening was ample, admitting two fingers and unobstructed. A complete division of the pylorus was made. The patient has had no further discomfort, and is apparently well.

Following resection of the pylorus, these complications have not occurred in our cases nor have they been reported by other surgeons. On the contrary, the ultimate clinical results are uniformly good, and the size and position of the stoma or the suture material used make very little difference.

The numerous methods for permanently excluding the pylorus after gastroenterostomy, including the use of the aponeurotic band, the suspensory ligament, the purse string, the silver wire, the aluminum band, etc., testify to the drift of surgical endeavor in this direction.

These various methods have in the main proved unsatisfactory, for it is known that a natural restoration of the pylorus can take place in the most extraordinary manner. With the exception of a complete resection of the pylorus, the unilateral pyloric exclusion, after the method of von Eiselsberg[8], is alone to be relied upon. In von Eiselsberg's operation, the line of division should not be made too near the pyloril ring. The lumen of the stomach narrows toward the pyloric opening, and a proper inversion of the distal edge therefore cannot so readily be done. We have used this method of excluding the pylorus in two cases and found the procedure scarcely less difficult than pylorectomy.

Rodman[9] was the first among American surgeons to advocate pylorectomy for ulcer. In a paper read before the Surgical Section of the American Medical Association in 1906 he said: "Pylorectomy alone successfully deals with multiple ulcer, gastric and duodenal, prevents perforation, hemorrhage, disabling adhesions, stricture, hour glass contraction and malignant degeneration. Moreover, it leaves the stomach in the best condition for further usefulness. . . The tendency of ulcer to perforate is so marked, and the consequences so disastrous that it seems to me, and ever has done so, the operation of choice. The Germans generally favor the practice, many of them doing so warmly. Jedlicka

calls it the normal procedure and claims for it a mortality of 5.88 per cent."

Dr. Rodman had collected 31 cases from the work of five surgeons (Mayo, Robson, Park, Finney and Rodman). In this series, so far as he could learn, there had been only one operative death. During the years 1910, 1911 and 1912, pylorectomy for benign stenosis was done by the Mayos in 25 cases, with no deaths.

Since the attitude toward excision of ulcer has become progressively more favored, pylorectomy will undoubtedly be more frequently done. While the mortality is higher than in gastroenterostomy alone, the real gravity of the operation has probably been exaggerated. If a patient is greatly enfeebled from starvation the operation can be done in two stages. We found it necessary to do this in only one of our cases. The prompt recovery from operation and the comfortable convalescence which these patients enjoy is remarkable.

Ulcer on the lesser curvature nearer the cardia is less easily approached, and the question of the procedure in such cases is of greater moment and may be somewhat perplexing. Although neutralization of the acid stomach contents by gastroenterostomy invariably exercises a favorable influence upon ulcer, if one considers the liability to malignant degeneration and admits the occasional difficulty or impossibility of differentiation between ulcer and cancer with the lesion plainly in sight, there can be no question in regard to the wisdom of excising the lesion. Gastroenterostomy and partial gastrectomy, whenever possible, should be done in such cases. This method of operation removes the ulcer and obliterates the pylorus, thus accomplishing a double purpose of genuine importance. Division is then made with the scalpel or cautery flush with Payr's clamp. (Fig 1.)

Upon turning the pyloric segment over the pancreas is exposed and a good opportunity is allowed to divide adhesions which commonly involve the head of the pancreas. On two or three occasions I have torn into the surface of the head of the pancreas without any serious consequences. The duodenal stump has served to cover this injury (Mayo). The gastro-duodenal vessels are now ligated and divided. A small Payr's crushing clamp is placed on the duodenum. The crushed area is tied, severed and inverted with a purse string of linen. A continuous Lambert suture of linen with straight or curved needle is applied to the stomach while the large crushing clamp is in place. The first insertion of this suture is not tied. (Fig. 2.) The clamp, which has been in position for several minutes, is removed and the ends of the suture drawn firmly in opposite directions. This accomplishes an inversion of the crushed edges. A second row of continuous or interrupted sutures of linen completes the closure. (Fig. 3.) The abdominal wound is then closed. Whenever the pancreas has been injured I have employed a drain of rubber tissue.

The following eight cases I wish to record as done consecutively and with uniformly good results. The histories of these cases have been reviewed and abridged by Dr. R. W. French, and he has recently investigated the condition of each patient. Roentgenographs have also been made by Dr. Walter Dodd as a post-operative study of gastric resections.

The following technic, with only slight variations from that already defined by Kocher, Moynihan and Mayo, was employed in each case: The abdominal incision is made about 1 cm. to the right of the middle line from the ensiform cartilage to or below the umbilicus. After an examination of the abdominal and pelvic viscera, the extent of the pyloric segment to be removed is first determined. Posterior gastrojejunostomy is then done, placing the stoma beneath the cardiac orifice, thus insuring ample room for resection. This anastomosis should always be made before resection of the pylorus is undertaken. If the conditions are favorable for pylorectomy, the coronary artery and the right gastro-epiploic artery are ligated at nearly opposite points which mark the line of division of the stomach. Ulcer of the lesser curvature, especially when large, shortens the length of the lesser curvature, so that in order to make the section through healthy tissue it may be necessary to include a considerable portion of the stomach. The gastro-hepatic omentum is then ligated and divided to and including the pyloric branch of the hepatic artery. The gastro-colic omentum is then ligated and divided. Payr's large crushing clamp is next applied, marking the limit of stomach conservation. The omentum should be separated at least one-half inch from the clamp to allow for inversion. A straight heavy clamp is now placed on the pyloric side and close to the crushing clamp.

The histories of these cases, in brief, follow:—

Case 1. Mr. J. S. (273) Admitted to the Highland Hospital on Jan. 13, 1908. Referred by Dr. G. G. Parlow of Fall River. Aged 43, married, musician, born in Scotland.

Family History and *Past History.* Not remarkable.

Present Illness. "Indigestion" of 15 years' duration, consisting of epigastric distress after meals with eructations of gas and acid stomach contents. For two years prior to entrance to the hospital, he had had pain coming on one to two hours after meals, localized above and to the right of the umbilicus, relieved by food or soda. During the two months before entrance the pain had become almost constant, food no longer gave relief; he vomited once or twice a day, no blood or "coffee grounds" in the vomitus. Had lost much weight during the past two years, amount not known. Bowels were sluggish and stools were tarry at times.

Physical Examination. A pale, emaciated man, temperature, 99.6, pulse 80. Chest and extremities were negative. Abodmen flat, stomach dilated, suc-

cussion present, no palpable mass, tenderness on deep pressure to the right above the umbilicus.

Jan. 17, 1908, operation for pyloric obstruction. An irregular, hard mass was found at the pylorus, adherent to the gall bladder and covered by omentum. It was thought to be carcinoma. A posterior gastrojejunostomy was done. After a satisfactory convalescence of ten days, in view of the suspected carcinoma, he was operated upon again. The tumor at the pylorus had decreased in size surprisingly. A pylorectomy was done including a large segment of the stomach. Pathological examination of the specimen removed showed multiple ulcers.

He was discharged from the hospital Feb. 17, 1908.

Seen in March, 1914, he stated that his weight had increased from 126 lbs. to 149 lbs. He had had no indigestion since and felt perfectly well.

CASE 2. Mr. G. C. (649) Admitted to the Highland Hospital Sept. 22, 1910. Referred by Dr. W. G. Turner of Fall River. Aged 57, married, weaver, born in England.

Family History and *Past History.* Good.

Present Illness. For more than 25 years has had "stomach trouble," consisting of a gnawing pain in the epigastrium, coming on two hours after meals, nauseated and vomited occasionally. Pain often awakened him at night. Food relief present. During the past three months pain had been severe, had lost weight rapidly, and often vomited food which he had taken three days before. Had retained only liquids for the past week. Bowels were sluggish, color not noted.

Physical Examination. Well developed, emaciated, nervous man. Skin and mucous membranes were pale. Abdomen level, no mass palpable, marked tenderness high in the epigastrium in middle line and to the right. Sept. 23, 1910, operation for pyloric obstruction. Ulcer found on the lesser curvature of the stomach near the pylorus. Posterior gastrojejunostomy was done, then pylorectomy with removal of the ulcer area. Convalescence uneventful. Discharged Oct. 18, 1910.

Seen in May, 1914, he stated that he had not had a sick day since leaving the hospital and that his weight had increased from 90 pounds at the time of admission to 150 pounds, his present weight.

CASE 3. Mrs. C. E. T. (973) Admitted to the Highland Hospital Nov. 17, 1911. Referred by Dr. C. A. Briggs of Assonet, Mass. Aged 65, married, housewife, born in Massachusetts.

Family History and *Past History.* Not remarkable, except for the fact that her mother died of some "stomach disease."

Present Illness. Indigestion for about seven months, consisting of loss of appetite, sour stomach, epigastric distress directly after meals, nausea rarely, no vomiting. She thought that she had lost a little in weight.

During ten days before entrance she had three attacks of severe, sudden, localized epigastric pain not associated with exercise or food, followed by vomiting from two to six ounces of dark blood with relief of pain. Fainted during an attack. Vomited six ounces of blood soon after entrance. Bowels were constipated.

Physical Examination. Not remarkable except for a marked pallor of skin and mucous membranes; hemoglobin 55%. There was marked spasm and tenderness in the epigastrium. Stools were tarry.

She was kept under observation for five days, during which period there was improvement in her pulse and general condition, although occult blood in the stools persisted.

Nov. 22, 1911, operation. An ulcer of the stomach was found on the lesser curvature and involving the pylorus. Posterior gastrojejunostomy and pylorectomy were done. Convalescence was uneventful. Discharged Dec. 22, 1911.

She reported in April, 1914, that she had had complete relief from symptoms ever since the operation and considered herself perfectly well.

CASE 4. Mrs. M. E. M. (1103). Admitted to the Highland Hospital May 3, 1912. Referred by Dr. G. H. Hicks of Fall River. Aged 60, married, housewife, born in England.

Family History. Good.

Past History. "Pneumonia" three times, last 12 years previously, typhoid fever at 20. Occasional attacks of nausea and vomiting for many years.

Present Illness. "Stomach trouble" for seven years, consisting of epigastric pain, heart-burn and occasional vomiting. During the past two years these symptoms had increased markedly in severity, the onset of pain had been one-half to two hours after eating and awakened her regularly every night. It was relieved by food or vomiting. There was no history of hematemesis. During the past three months she had had three attacks of agonizing pain after eating, which required morphia for relief. Bowels were constipated, color of stools not noted. Had lost much weight, amount not known.

Physical Examination. Well developed but emaciated, nervous woman. Lungs, few scattered râles and prolonged expiration. Heart, normal size and position, sounds regular and of fair quality, soft, blowing, systolic murmur over the precordia not transmitted, heart loudest at the base. Aortic second sound accentuated. Abdomen, scaphoid, liver edge palpable 3 cm. below costal margin, considerable spasm and tenderness in the mid-epigastric line where an irregular, hard mass was made out.

Analysis of the stomach contents showed free HCl 30, total acidity 70, otherwise not remarkable.

May 4, 1912, operation. A large indurated ulcer was found on the lesser curvature near the pylorus.

Posterior gastrojejunostomy was done, and the pylorus was excised, including the ulcer and a wide margin of normal stomach. Convalescence was uneventful. Discharged May 25, 1912.

She reported in April, 1914, that she had had no recurrence of symptoms, that she soon regained her normal weight and held it.

CASE 5. Mr. H. D. Y. (1556) Admitted to the Highland Hospital Aug 30, 1913. Referred by Dr. G. G. Parlow. Aged 30, single, carpenter, born in Massachusetts.

Family History. Negative.

Past History. "Dry pleurisy" ten years previously, no history of hemoptysis, occasional attack of bronchitis, with a persistent, slight cough for a few months. Last attack two years before. Has always been thin, but had lost 25 pounds during the past year and a half.

Present Illness. Indigestion as long as he could remember. Chief complaint was epigastric distress after eating, which reached its maximum two hours later. Much gas, sour stomach and heartburn.

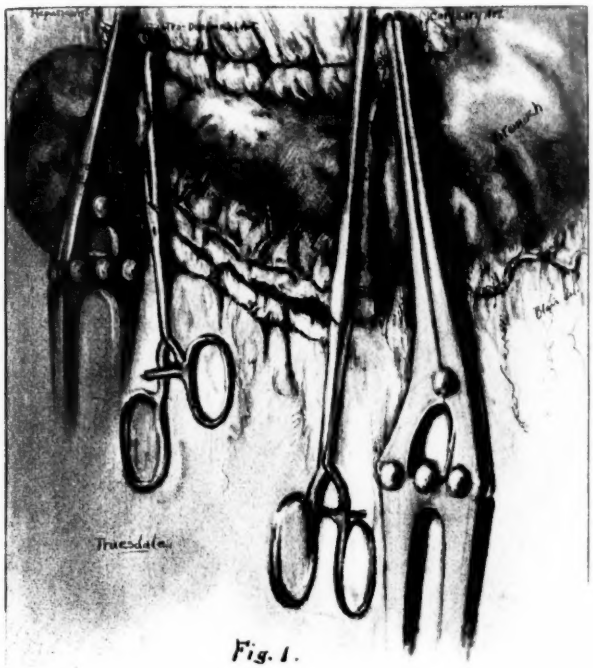


Fig. 1.

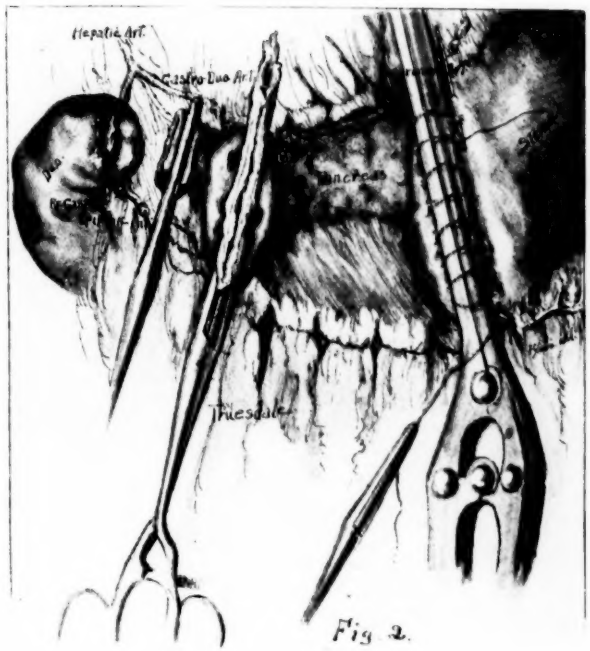
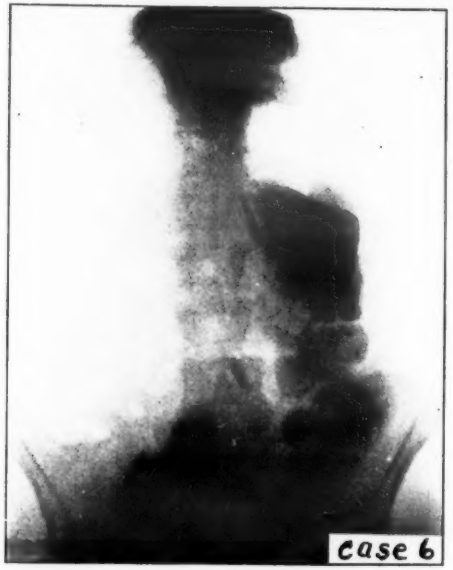


Fig. 2.

Fig. 3.



X-Ray photographs by Dr. W. J. Dodd, taken ten minutes after bismuth meal.

Food relief. Occasionally nauseated, rarely vomited. Bowels were constipated. Stools described as normal.

Physical Examination. Well developed, poorly nourished man. Lungs, area of dullness at right apex, extending to second rib in front and spine of scapula in back, bronchial breathing, increased tactile and vocal fremitus, no râles. Abodmen, level and not remarkable save for slight tenderness on right side of epigastrium near the costal arch. Bismuth x-ray showed a residue in the stomach after six hours, otherwise nothing definite.

Sept 3, 1913, operation. Posterior gastrojejunostomy and pylorectomy were done, removing an indurated ulcer mass on the superior surface of the duodenum involving the pylorus.

His convalescence was complicated by a persistent cough which began soon after he recovered from ether. Examination of the sputum revealed tubercle bacilli. The process remained limited to the upper part of his right lung. His convalescence was protracted. However, his improvement was steadily perceptible, and when discharged on Oct. 22, 1912, he was eating full house-diet with a relish and with no distress.

Seen in April, 1914, he stated that he had gained 25 pounds, and had had no return of symptoms. His cough had persisted for nearly six months, during which time he had been under the care of his physician, but since then it had not recurred. His physician reported that the tuberculous process had become arrested.

Case 6. Mr. B. M. (1565) Admitted to the Highland Hospital Sept. 5, 1913. Aged 48, married, clerk, born in England.

Family History and *Past History.* Negative.

Present Illness. For more than ten years has had attacks of stomach-trouble almost every year, lasting four or five months, generally in the winter or spring. These have consisted of epigastric distress, increased by food, loss of appetite, no heart-burn or sour stomach, no nausea or vomiting. The last attack had begun four months before entrance and had been more severe than the previous ones. The epigastric distress had developed into pain which kept him awake at night. He had anorexia, frequent nausea, and vomited once or twice a week. Eructations of gas and acid fluid were frequent. His bowels were constipated, and the stools were described as normal. He had lost 32 lbs. during the past year.

Physical Examination. Well developed, poorly nourished man. Tongue thickly coated. Chest negative. Abdomen level, slight tenderness localized in the mid-epigastrium, more on the left side, otherwise not remarkable. Bismuth x-ray showed marked stasis after six hours.

Sept. 8, 1913, operation. Gastrojejunostomy and partial gastrectomy were done for large mass involving the lesser curvature of the stomach, lower border of which was 2 cm. from pylorus. The gastro-hepatic omentum was shortened, thickened, and contained numerous large glands scattered along the lesser curvature toward the cardiac end. There were nodules in the liver. However, the lesion was thought to be carcinoma. Posterior gastrojejunostomy and a wide resection of the pylorus were made. Subsequent microscopic examination revealed ulcer only. He made a satisfactory convalescence and was discharged Oct. 2, 1913.

Seen in April, 1914, he stated that he had gained steadily in weight, that he was eating a liberal diet and had had no recurrence of symptoms.

Case 7. Mr. J. F. P. (1990) Admitted to the Highland Hospital Dec. 31, 1913. Referred by Dr. T. J. Brennan of Little Compton, R. I. Aged 57, married, stage driver, born in Massachusetts.

Family History and *Past History.* Good.

Present Illness. Stomach-trouble for fifteen years, consisting of epigastric distress and a gnawing pain coming on four hours after eating, relieved by food, soda or vomiting, Vomitus sour, never contained blood. His only period of comfort through the year was during the warmest weather of summer. Had lost about 30 pounds during the past year. The distress had been unusually severe during the two weeks previous to entrance, so that he had been afraid to eat more than crackers and milk. Bowels were not remarkable.

Physical Examination. Well developed thin man. Tongue clean. Chest negative. Abodmen scaphoid. There was no palpable tumor, but marked tenderness and spasm of the upper part of right rectus muscle. Bismuth x-ray showed an obstruction at the pylorus.

Jan. 1, 1914, operation. Gastrojejunostomy and pylorectomy were done for ulcer partially obstructing the pylorus. The scar of the ulcer was 3 cm. in diameter and was located on the superior surface of the first portion of the duodenum and encroached upon the pylorus.

He made a very satisfactory convalescence and was discharged on Jan. 19, 1914.

Seen in April, 1914, he stated that he had no discomfort of any sort since leaving the hospital. He returned to his usual work one month from the date of the operation. His weight had increased steadily and was then within 5 pounds of his average weight.

Case 8. Mr. J. G. C. Admitted to St. Anne's Hospital Dec. 4, 1913. Aged 41, married, laborer, born in Portugal.

Family History and *Past History.* Not remarkable.

Present Illness. For five years has had epigastric distress coming on about two hours after meals, relieved by food, soda or a warm drink. Two months previously had been operated upon for "acute appendicitis" and stated that drains had been left in the wound. Since the operation his distress, localized in the epigastrium, had been practically constant and increasing in severity. He had lost much in weight during the last year, but had no idea how much. He often tried to vomit but with very little relief. Food and soda gave relief, but he had reached the point where he was afraid to eat.

Physical Examination. Not remarkable except for his emaciation and his abdomen, which showed a low right rectus scar of a recent operation, and marked tenderness and spasm of the whole epigastric region.

Dec. 5, 1913, operation. An indurated mass 4 cm. in diameter was found on the lesser curvature of the stomach near the pylorus and covered by an adherent tab of omentum. Separating the omentum from the stomach with a dry sponge uncovered an opening through which gas and stomach contents spouted with each inspiration. From the appearance of the peritoneum and the omental adhesions it was obvious that the patient had suffered a recent perforation of the ulcer and, as frequently

X-Ray photographs by Dr. W. J. Dodd, taken ten minutes after bismuth meal.

occurs, the opening was spontaneously sealed by a tab of omentum. Drainage employed at the time of his appendectomy further enhanced his recovery from the original focus of his disease, which was within all probability in his upper abdomen.

The usual posterior gastrojejunostomy was done and a pylorectomy removing the whole ulcer-bearing area. The operative procedure was rendered difficult in this as in the other cases where the ulcer happened to be surrounded by a wide, inflammatory zone and dense adhesions. Nevertheless, the patient made an excellent recovery and was discharged Dec. 23, 1913.

Seen in April, 1914, he stated that his digestion was "perfect," he had gained weight steadily, had returned to his work two months after the operation and had had no symptoms since leaving the hospital.

A pathological study of the specimens removed in the cases reported above was made by Dr. Annie C. Macrae.

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THE CAUSES OF INSANITY.*

BY H. WALTON WOOD, M.D., NEW BEDFORD, MASS.

IT is not the intention of this paper to deal with those cases of mental defects congenital in origin, and represented by idiots, imbeciles, or those dependent upon mechanical factors, such as gross traumata, cerebral hemorrhage with consequent softening, and brain tumors, but to discuss the causes of those cases which develop their psychosis later in life and after an apparently normal period of development.

Insanity dates back as far as recorded time, and ample records are to be found in the oldest books of both the Eastern and Western worlds of abnormal mental phenomena. In the Old Testament we read of Saul's periods of depression caused by the "evil spirit of the Lord being upon him." Nebuchadnezzar believed himself changed into an ox and "did eat grass and his body was wet with the dew of Heaven until his hair grew like the feathers of the eagles and his nails like birds' claws." Ajax was tortured by the Furies until he fell upon his own sword. And Ulysses simulated madness to justify his absence from the Trojan war. Thus we see insanity in itself did not differ greatly in its symptoms from ancient times until the present, and it is an easy matter to follow it through the ages, through the period of religion and mysticism, when those afflicted were either supposed to be possessed of the devil or inspired of the Deity. Angels gave warnings and revelations by dreams, by mental impressions, and even fought for men against the under-world.

Mental disturbances were, therefore, considered as the manifestation of some spiritual being, god or demon, who either actively inhabited the body of his victim or who merely played upon him from without. If the symptoms were in harmony with the religious views of the time, it was concluded that the inhabiting spirit was benign in character, and the individual was revered as an exceptionally holy person. If, however, the individual's conduct conflicted with the dominating ethical code, his treatment consisted in punishment to drive out the devil. About 460 B.C. Hippocrates laid down the principle that the brain was the organ of mind, and that insanity was the result of some disturbance of that organ. This theory was not destined to be successfully applied at that period, and during the intellectual stagnation of the Dark Ages the causes of insanity reverted back to the demonological conception.

It is not surprising from the very obscurity of the mental function itself that various hypotheses were brought forth to explain the mysteries of disordered minds, and we find these attempted explanations in harmony with the general thought and knowledge of the period. For many centuries, down to the beginning of the 17th century, mystery, religion and things pertaining to these were considered the predominating causes of insanity. The science that touched the popular imagination in the 17th century was astronomy, and to quote from Wilkins' works, according to a couplet of that time:—

"God gave man an upright face
That he might view the stars and study astronomy."

From this time we enter into a period of the mystical doctrine of the dominance of the planets over plants, minerals and diseases. Hakewell at this time described insanity as an affection caused by the influence of the moon, hence the name "lunatic."

During these changes in opinion, however, regarding the causes of insanity, religion and superstitious belief in possession by spirits, still held front rank as the primary cause. In 1637 Jane Hawkins, the Boston midwife and dispenser of quackery, oil of mandrakes, was diligently examined on suspicion of familiarity with the devil. It is interesting to note that as early as that period, people were diligently examined regarding their sanity. Eight years later a man from Virginia, reported to have skill in necromancy, was blown up in Boston harbor, and strange to say, it was accounted a marvel that he could never afterwards be found. Yet more diabolical was it that men of fiery shapes, or fire in the shapes of men, walked the water near where the ship had exploded. These are exam-

* Read before the Fall River Medical Society, March 25, 1914.

ples of the extent to which people of that time went to prove their belief in the spiritual element of insanity.

Witchcraft was apparently a side issue of insanity; it was not absolutely essential for a person to show symptoms of a deranged mind, indeed some of the more active minds were suspected of being witches and treated accordingly. It is probable that witchcraft was derived from the religion of German mythology. In 1656 the wife of one of the magistrates was hanged for a witch only for "having more wit than her neighbors." In the settlements along the Connecticut devils were particularly active, and in some instances the ordeal of swimming the witch to see if she could float were resorted to. Martin Luther inherited the traditions of the humble class from which he sprang, and set the first Protestant example of extreme faith in witchcraft, berating the medical men who attempted to trace mental diseases to other causes, most of which he himself attributed to the devil. He advised that afflicted children should be cast into the river, and complained afterward that he was not obeyed. The infinitely delicate shadings by which mental sanity passes without any line of demarcation into insanity could not then be imagined, consequently a belief in demoniacal possession was inevitable. These things had the sanction of the Ages, of religion, and of science itself. More modern conjectures on the causes of insanity have followed closely the transit of civilization, and with the increasing intellect of the nations we find the superstitions and opinions of the ancients rapidly giving way to the advance of scientific investigation.

Very little progress was made in the study of insanity until the latter part of the 18th century. About this time mind was believed to be the product of the brain, and diseased minds were considered as a pathological process of the brain, as pneumonia is of the lung. This was the period of the physiological conception, and while it did not accomplish all that it sought in an endeavor to explain the causes of insanity, it did stimulate research and intelligent investigation which later gave birth to psychiatry,—and the scientific study of mental diseases. During the 19th century rapid progress was made in the anatomical and physiological study of the brain and in the humanitarian treatment of insanity. Mental diseases were placed upon a medical basis, and the patients were treated as sick people instead of transgressors of the religious laws. During this period cerebral localization was demonstrated, and for a long time this was believed to be the key to the solution of insanity. Up to well within the 19th century no attempt had been made at classification, and even now we have various classifications, none of which is entirely satisfactory, but they mark a tremendous step in progress. With the differentiation of the various forms of mental diseases, we must refer to them as "the insanities," for we can no longer consider insanity as a disease entity. At the present time the classical causes of insanity are usually divided into the extrinsic or external causes, which embrace heredity, alcohol, syphilis, stress of life, and environment. Under the intrinsic or psychogenetic causes we may mention anxiety, fright, defect, educational and constitutional inferiority as those most frequently mentioned. These causes are in keeping with the times and, just as we found in the insanity of the ancients, are in harmony with the general thought and knowledge of the period of today.

Heredity is still a most important element among the causes of insanity. It may be selective, in that the patient develops the same form of mental disturbance as the progenitor, or it may be general in that he inherits the psychopathic tendency. Mendel has pointed out some very interesting laws of heredity based upon his observations on crossing the pollen of flowers and thereby bringing out the characteristic dominant or recessive elements. In regard to mankind, the chief lesson we may learn from these investigations is the very great importance of hereditary transmission,—characteristics good or bad that disappear in one generation may simply be recessive and in the course of successive intermarriages may again come to the surface in accordance with the Mendelian law. The many attempts to verify this law in breeding have shown that it expresses probably a great truth, although the application of it to the practical purposes of breeding is beset with many complications. Thus it can be seen that one defective in a family may not be the direct cause of defectiveness in the immediate progeny, but this defect may remain recessive until its victim is mated with another recessive of the same characteristics, whether of the same strain or not. It is not probable, however, that mental disease is directly transmitted to the offspring except in those cases in which well marked mental deficiency is present in both parents. Then the children will be congenitally defective, as represented by the feeble-minded, idiots, and imbeciles. This, however, may also occur when one parent is defective. In this case it is probably due to the blending of a recessive element which is atavistic in nature. This transmissible defect is more evident in the conveyance of an inherent susceptibility to a psychosis,—which marks the psychopath.

The nature of the inherent susceptibility is difficult, almost impossible at the present day, to explain. In this respect the heredity of mental disease is analogous to the heredity of tuberculosis in that the disease itself is not transmissible, but only the nidus, or a "place to put it." Furthermore, it seems reasonable to suppose that our knowledge of the large number of psychoses that make their existence manifest at the time of the greatest bio-chemical changes of life,—during adolescence, and at the involutional period,—that this inherent susceptibility may be bio-chemical in nature.

Rosanoff has arrived at the following conclusions based upon a large and close study of the Mendelian theory. The neuropathic constitution is transmitted from generation to generation as a trait which is in the Mendelian sense recessive to the normal. His deductions are as follows:

1. Both parents being neuropathic all children will be neuropathic.

2. One parent being normal but with the neuropathic trait from one grandparent, and the other parent being neuropathic, half the children will be neuropathic, and half will be normal but capable of transmitting the neuropathic make-up to the progeny.

3. One parent being normal and of pure normal ancestry and the other parent being neuropathic, all the children will be normal but capable of transmitting the neuropathic make-up to their children.

4. Both parents being normal but each with a neuropathic taint from one grandparent, one-fourth of the children will be normal and not capable of transmitting the neuropathic make-up to their progeny, one-half will be normal but capable of transmitting the neuropathic make-up, and the remaining one-fourth will be neuropathic.

5. Both parents being normal, one of pure normal ancestry and the other with the neuropathic taint from one grandparent, all the children will be normal. Half of them will be capable and half of them incapable of transmitting the neuropathic make-up.

6. Both parents being normal and of pure normal ancestry all the children will be normal and not capable of transmitting the neuropathic make-up to their progeny.

In some classes of cases this psychopathic tendency may be manifest before the onset of a well-defined psychosis. Hoch has pointed out in the dementia precox cases, the so-called "shut-in personality," which he describes as "Persons who do not have a natural tendency to be open and to get in contact with the environment; who are hard to influence, often sensitive and stubborn, but the latter more in a passive than in an active way. They show little interest in what goes on, often do not participate in the pleasures, cares, and pursuits of those about them. Although often sensitive they do not let others know what their conflicts are. They do not unburden their minds, are shy, and have a tendency to live in a world of fancies."

Heredity plays its most important part in such diseases as dementia precox and the maniacal depressive group, and probably has no part in the causation of general paralysis, except it be the transmission of the inherent susceptibility, which is precipitated by a syphilitic infection. For we know now general paralysis to be a true syphilitic infection attacking the brain and thereby causing a destruction of the nerve elements with a consequent showing of mental symptoms. Of all the number of syphilitics only about five per cent. show affections of the central nervous system, so there must be some cause for this selection in such a small number, outside of the syphilitic infection itself.

This susceptibility to mental disease undoubtedly does not remain at a constant level and is probably influenced by the general condition of the patient or by any condition which lowers the general vitality, such as alcohol, environment, stress of life, etc. All the psychogenetic causes of insanity may possibly be grouped more as symptoms than causes of insanity. The normal mind should be able to handle the problems of worry, anxiety, etc., without disintegration, for it is a well-known fact that no mind works to its full capacity and always has a wide margin of safety which should be capable under normal circumstances to take care of extra load and stress. One may have all the so-called causes of insanity except the susceptibility and yet not develop a psychosis; or a psychosis may develop in those most protected from these causes, therefore it does not seem unreasonable to assume another and more potent cause for the true psychosis, namely, an inherent susceptibility, probably bio-chemical in nature.

ORGANOTHERAPY.*

BY H. GILDERSLEEVE JARVIS, M.D., HARTFORD, CONN.

MEDICAL treatment, by means of preparations derived from the various organs of animals, forms a subject of intense interest. Although its scientific application is comparatively of recent date, it was known to the ancient Egyptians and the use of orchitic substance in the treatment of obesity is described in the writings of Sushruta, who lived some time between 400 and 500 B. C. This is probably the first mention of organotherapy and from that time, frequent references have been made in literature.

Amongst the curious substances drawn from animal sources, which have been suggested from time to time for the cure of disease, one of the most famous was the "Bezoar Stone," which was ingendered in the inner part of a beast that is commonly called a goat of the mountain. "This stone has great excellency against all kinds of venom. It shall preserve him that shall carry it about him and that no venom or venomous thing shall offend him." This early belief, in the medicinal virtues of substances of zoölogical origin, was maintained throughout later periods and undoubtedly suggested the scientific study of the various glands and their functions, which has resulted in organo-

* Read at a meeting of the Hartford Medical Society, May 4, 1914.

therapy occupying an important position in present day treatment of disease.

Organotherapy, as it is now termed, means the treatment of disease by the administration of animal organs or their extracts; while another term, opotherapy or homologous organotherapy, means the treatment of the diseased organ of the patient by extracts of the corresponding organ in the animal. This last method is practically obsolete. Organotherapy depends for its efficacy upon the fact that various organs and tissues of the body produce an internal secretion, which has a more or less profound effect upon the general metabolism. Internal secretions have also a great deal to do with the maintenance of equilibrium of the body both on the physical and mental side.

These secretions arise, as a rule, from two rather different sorts of glands; glands which have a duct and those which have not. As far as investigations have gone, both types of these glands do not always produce an internal secretion. The glands and tissues which are generally considered in this light are:—thyroid, parathyroid, thymus, adrenals, ovaries, testes, pituitary, pancreas and, to a lesser extent, the spleen, liver and kidneys.

The anatomical and histological pictures of these glands have this in common;— they contain a supporting stroma and secreting cells, which produce an internal secretion upon which the principle of organotherapy is based. I will first take up the uses and actions of each gland individually and then attempt to bring forth the newer ideas how all these glands work together and correlate in maintaining the body in equilibrium. There are two ways of administering the glands: (1) In the fresh state. (2) In some artificially prepared way. The gland can be given like raw meat pulp in tepid beef tea or soup, or can be rolled in powdered sugar and swallowed. This constitutes a very active method of administration, enables the patient to take the gland with the entirety of the substance contained therein and which has not undergone any change by drying or artificial extraction by chemical processes. In practice, however, we have to reckon with the difficulty of obtaining a regular supply of perfectly fresh products. This is a very great drawback, because all glands with an internal secretion rapidly undergo autolysis and decomposition.

Allowance must also be made for the revulsion which many patients display to the ingestion of raw tissue and this has led to the production in biological laboratories of a whole series of internal tissue extracts; for the most part dried in vacuo at a low temperature and put up in the form of tablets, cachets and pills.

In regard to the administration of thyroid extract, it is a good plan to begin with a third of a grain a day for the first few days, then two-thirds of a grain for two or three days and so on until by the tenth day, the patient is taking a two-grain dose daily and this may be increased until the desired effect is obtained. After the active phase of the treatment in patients, whose condition has been improved but not cured, we have to establish what may be called a thyroid equilibrium by administering maintenance doses a couple of times a week. The thyroid treatment is indicated in all cases of manifest thyroid inadequacy and the sooner it is instituted, the better the results are likely to be. These results are excellent in spontaneous myxoedema of the adult, described by Gull, Ord, Charcot and others; an affection which has been shown to be dependent upon an insufficiency of the gland and met with mostly in women, especially at the menopause, or in those who are exhausted by repeated pregnancies. It may also be caused by infective lesions of the thyroid gland in the course of acute articular rheumatism, influenza, tuberculosis and other infections.

The results are also good in post-operative myxoedema. The results are less pronounced in infantile myxoedema, unless the treatment be instituted at a very early stage, at a period when the physical and intellectual development of the patient still admits of improvement. If undertaken at a sufficiently early period, the treatment may determine what amounts to a genuine physical and mental resurrection. It also has been recommended in eczema, ichthyosis, psoriasis and scleroderma. Its use in hyperthyroidism is only mentioned to be condemned.

Side by side with thyroid organotherapy, is the use of the extract of parathyroids. This has been given for the relief of the acute convulsive disturbances that follow the removal of the thyroid gland, because the parathyroids were probably removed with it. It is also given in tetany, and in paralysis agitans it has given some good effect.

The pituitary gland, as you all know, has two distinct parts—anterior with pars intermedia; posterior and infundibulum. So far extracts have been made only from the posterior part. Schaefer, Howell, Oliver and others brought out that this lobe produced a rise in blood pressure and diuresis. In 1906 Dale mentioned its marked effect upon the uterine muscle and since then it has been used in obstetrics to increase uterine contractions. It also has been used in Addison's disease, intestinal atony, uterine haemorrhage, shock and collapse.

Suprarenal organotherapy in some respects is quite like pituitrin. Abel first discovered its use, but Takamine gave the name adrenalin to the active principle which he isolated. Its use is quite familiar to you all. I will simply enumerate some of its more important uses and not attempt to go into details. Probably its greatest use is in shock and collapse where the pressure is very low. On account of its vasoconstrictor properties it is used as a local styp-

tic, also in solution with some local anaesthesia, in asthma of the bronchial type, in some specific infections of the adrenals and it is indicated in Addison's disease where it sometimes helps a great deal, especially in the marked asthenic forms dependent upon pure glandular insufficiency and not accompanied by perivascular symptoms.

At various times testicular organotherapy has been greatly lauded, but it appears to be the least active of any of the extracts; in spite of the fast that physiological research has demonstrated that the interstitial cells of the testes elaborate an internal secretion. It is indicated in general debility, neurasthenia and in disturbances at or about the time of puberty.

The next extract that would naturally follow for discussion is the ovarian extract. The employment of the extract of the entire gland has now been practically abandoned; corpus luteum, either in the fresh or dry form, being used in preference to the entire gland.

To L. Frankel is due the credit of establishing firmly on an experimental basis the fact that the corpus luteum probably represents the principal source of the internal secretion of the entire ovary. Burnam and Kelly were the next to publish any exhaustive work. The conclusions they reached were somewhat as follows:

Most striking results were obtained in a class of patients usually described as neurasthenics. Most of them were over 35 years of age, menstruating regularly, but complaining of being very easily fatigued, usually more so at the menstrual period, sometimes of slight dyspeptic symptoms and frequently of psychic depressions. Good results were obtained in cases of functional amenorrhoea, both in young girls and in adult women. This applies to the obese type and that in which there is lack of fat development. It also increases in many instances the amount and duration of the flow. Its use in dysmenorrhoea and sterility was disappointing, but it was found a favorable means of controlling the symptoms at the natural or artificial menopause, more especially the latter. In some cases, one tablet three times a day sufficed, in others the dose was as high as eighteen or twenty tablets a day. Benefit usually followed in a few days. In some cases the drug could be stopped in a few weeks. It is best to administer it during meals, as in this way there is less likelihood of gastric upset.

The function of the thymus and consequently the use of its extract is not very definite. Mendel used calves' thymus, both fresh and dessicated, and obtained marked benefit in cases of rachitics, showing prodromal symptoms only and in those where deformity of the osseous system was the chief feature. Splenic enlargement was also decreased. Nathan obtained good results in rheumatoid arthritis. It has been used in goitre cases, mostly non-exophthalmic.

In regard to the physiological action of extracts of the pineal gland, I will dismiss with a very few remarks. After looking over the work of Cyon, Dixon, Halliburton, Howell, Jordan and Eyster, I would come to the conclusion that its extracts have very little effect upon the heart and kidneys or the vasomotor apparatus. Of course their work leaves entirely untouched the possibilities of more gradual effects over longer periods of time, as well as the influence these bodies may exert on metabolism or functions and their relations to other organs of internal secretion.

Pancreatic organotherapy, for the time being, has a very restricted field of usefulness, because the physiology of the pancreas is still comparatively unknown. At any rate it is very difficult to detect clinically, early enough for the treatment to be of any avail. Dry or fresh pancreas may be employed. As a rule, however, it is administered in the form of cachets or keratinized pills containing powdered pancreas. It would seem to be indicated in hepatic disease, accompanied by symptoms pointing to pancreatic disease, which can only be detected clinically, by investigation of the pancreatic function. Loeper and Esmont claim to have threated tuberculosis in the first and second stages by pancreatic extracts with good results. The treatment no doubt acts more on the digestive tract than on the organism in general. It is also indicated in diabetes, but unfortunately although beneficial effects have been observed in a few instances, it is futile in cases of diabetes running at all a rapid course.

Bone marrow is employed with advantage in all forms of grave anemia. Renal organotherapy has been tried in many intoxications with beneficial effects, in chronic nephritis, in gouty subjects who have developed renal lesions and in acute nephritis in which it exerts both a diuretic and antitoxic effect. Both of these tissues need further study before any very definite conclusions can be drawn.

Hiss, Zinsser, Floyd, Alexander and others have prepared a leucocytic extract which they have used in infections of various sorts, but their results are not convincing and as yet it has not received any wide range of use.

We now come to hepatic and biliary organotherapy, also very efficacious methods of treatment, not only by the direct action of the extracts, but also, and especially, by their stimulating action on the liver functions. In respect to hepatic extracts, more possibly than any other, it behooves us to have in mind that the treatment is not only substitutive but is also stimulating in respect to the gland function, this not being entirely abolished but merely inadequate.

We can make use of the fresh liver stirred up in tepid beef tea. It can be given by mouth, or if necessary in the form of enemata, but the powdered form is much more conveniently administered. The powder is made up into pills

or boluses, gluten or keratin coated to resist the action of the gastric juice. The usual dose is from three to six grains of the extract, but this may be safely increased to two or three drams, corresponding to two or three ounces of fresh liver. Hepatic organotherapy is indicated in all infections and toxic cirrhoses, especially in the alcoholic, hypertrophic and atrophic forms. In increasing diuresis, at times its action is very striking, but is not constant. Bile is above all a cholagogue and should be used with this point clearly in mind.

In closing I will quote from Dr. Jean Dardel of Aix-les-Bains, France: "Organotherapy will enable the practitioner to score a certain number of therapeutical triumphs, provided that he has in mind to begin with, that he will rarely be called upon to fulfil a purely substitutive indication, because in most instances he must aim to stimulate the function of a gland that is working defectively. Then, too, he should grasp the idea that morbid states may be consequent upon pluriglandular insufficiency and this will encourage him to substitute multiglandular for monoglandular organotherapy on the same lines and for the same reasons that we employ polyvalent sera."

Reports of Societies.

NEW HAMPSHIRE MEDICAL SOCIETY.

123RD ANNUAL SESSION HELD AT CONCORD MAY 13, 1914.

The following officers were elected:—

President, Herbert K. Faulkner, M.D., Keene.

Vice-President, E. O. Crossman, M.D., Lisbon.

Councilors, C. S. Walker, M.D., Keene; E. M. Fitch, M.D., Claremont.

Anniversary Chairman, Frank W. Evans, M.D., Coos.

Necrologist, Eli E. Graves, M.D., Boscawen.

Scientific Work, D. E. Sullivan, M.D., Concord; C. R. Metcalf, M.D., Concord; John G. W. Knowlton, M.D., Exeter.

PRESIDENT'S ADDRESS.

President Mitchell gave a very interesting address dealing with the humane, conservative and economic care of the abnormal. He spoke of the immense sums of money annually spent for the care of deficient, delinquent and petty criminals without much, if any, permanent good resulting. All economists agree that the greatest asset of any country is the moral and mental condition of its citizens. This subject has long been neglected by the profession. Doctors should point the way. First prevention; then treatment. He advocated not a state reformatory or farm, but a state home with all the suggestive influence of a good home. It is not considered humane to send the average drunkard to a house of correction. They should be treated as diseased subjects.

ANOCI ASSOCIATION.

DR. GEORGE W. CRILE, Cleveland, Ohio, read a paper on his theory of Anoci Association:

There is a group of organs whose function is the conversion of potential into kinetic energy. These organs form what may therefore be designated a Kinetic System. Among the organs forming this system are the brain, the thyroid, the suprarenals, the muscles, and the liver. The kinetic system converts latent energy into motion or heat in response to adequate stimuli. If the stimuli are overwhelmingly intense, then the kinetic system—especially the brain, the suprarenals and the liver are exhausted, even permanently injured. *This condition is acute shock.* If the stimuli extend over a period of time and are not so intense as to cause an immediate breakdown or acute shock, their repetition may cause the gradual exhaustion of the kinetic system,—a condition which may be called chronic shock. Either acute or chronic shock may be measurably controlled by weakening or breaking the *kinetic chain* at any point.

In other words, shock is the result of an intense stimulation of this kinetic system, by insomnia, emotion, trauma, toxins, anaphylaxis, strichnin, etc., which leads to physical changes in the kinetic system and which, if carried far enough, exhausts that system. The kinetic system is constantly activated as long as there is life, but normal activation does not produce exhaustion. If normal activation of the kinetic system be exemplified by walking shock might be exemplified by the exhaustion caused by a Marathon race. The differences between normal processes and shock is that of intensity, not of kind. From these premises it becomes obvious that the exclusion of both traumatic and emotional stimuli will wholly prevent the shock of surgical operations.

The technic by which these injurious stimuli are excluded includes the use of nitrous oxic oxygen anesthesia which is a protection against shock through its interference with the use of oxygen by the brain cells; breaking the nerve connection between the injury and the brain by local anesthesia; the exclusion of pre- and post-operative psychic stimuli by the use of narcotics and sedatives; and the control so far as possible of such environmental factors as might depress or excite the patient.

The data upon which the conclusions stated in this paper are based are the result of prolonged laboratory experimentation, and of a critical comparative study of the clinical data of operations performed under ether alone and nitrous oxid oxygen alone and under complete anoci association.

POLIOMYELITIS.

DR. O. D. EASTMAN, Somersworth, discussed poliomyelitis, citing an epidemic of cases in Vermont, sixteen in one town. He emphasized the difficulty of an early diagnosis and spoke of the importance of noting all early symptoms in children. We should placard houses; strict isolation of cases and more attention to the infective nature of the disease is demanded.

THE NON-OPERATIVE TREATMENT OF ABDOMINAL PTOSIS.

DR. ROBERT J. GRAVES, Concord, read a paper on this subject. He spoke of the frequency with which it is acquired and almost universal neglect in its care. He has been treating these cases with corsets and is a believer in their use rather than in operative procedures. Demonstration on a model added much to the subject. He feels that corsets are a large factor in feminine well or ill being, and that there is no reason why we as physicians should not by a few specific directions take from corsets all of their harmfulness and make them important instruments for good.

CONCERNING COMMUNICABLE DISEASES AND THEIR MANAGEMENT.

DR. WILLIAM P. NORTHRUP, Professor of Diseases of Children, New York University and Bellevue Hospital Medical College, spoke as follows:—

"Keep your eye on the bug."

In the first class is measles,—in a class all by itself.

In the second put all the other common diseases—readily communicable—still speaking of childhood—whooping cough—it is hard to know just where it belongs—just between the two classes, perhaps. It is believed that it is communicated through the secretions of the mouth and nose by coughing and sneezing, and that it is immediate, and but very rarely through conveyance on fabrics, and that the so-called striking distance of the means of transportation, viz., coughing and sneezing, is perhaps three to five feet in a still atmosphere. It is not considered that whooping cough is nearly so communicable as measles. On the other hand, the dangers in connection with the complications are being more and more appreciated. In the aged, for they frequently have the disease, the exhaustion of the paroxysm frequently proves fatal. It is believed these two diseases are communicated through direct transmission of the infective material from warm moist mucous surfaces, from one person to another. It is commonly transmitted through kissing, coughing and sneezing, in contact or in near approach. We do not believe it is air-borne, or transported on fabrics or fingers, or if so, in such a small part of one per cent. as to make it of little moment.

It is believed that the carrier of measles is the danger also. A carrier may or may not, at any time, acquire the disease and may at any time contribute its carried germ to infect another susceptible person or make the other a carrier and so on. The same is true of scarlet fever. At the present time we have in the wards of the Presbyterian Hospital cribs surrounded by screens; these are not to keep germs out, as some have facetiously remarked, but to keep children out; not to keep germs from the children, but to keep children from the germs. We have treated typhoid thus behind a screen, convalescents scaling from scarlet fever, whooping cough, influenza, etc. We cease to think of the diphtheria bacillus escaping from the damp of the sewer opening and aviating through the thick miasms of the night air. But the germs can aviate—to use the new language of the recent inventions. Their radius of operation is, however, limited; it is limited to the carrying power of a cough and a sneeze, better in a still air, in the ideal conditions of a stuffy inside room. Avoid coughing into the atmosphere. The time is surely and rapidly coming when it will be bad form to boom out into the common atmosphere that reverberating cough and sneeze, unchecked.

THE TREATMENT OF DISEASES OF VEGETABLE PARASITIC ORIGIN BY DEEP MUSCULAR INJECTIONS OF MERCURY.

DR. BARTON LISLE WRIGHT, Surgeon, U. S. Navy: In 1905 I first began to use mercury in the treatment of tuberculosis, but it was not until 1907 that I had an opportunity to try out its value extensively. For every vegetable parasite mercury is the chemical affinity, and when properly injected into the infected host will cure the specific disease. It is believed now that mercury has a dual parasitotropic action: first, primary or direct; second, secondary or indirect.

In work mercuric succinimide has been selected because it is believed that a larger dose of this salt can be injected than of any of the others, and at the same time its parasitotropic action is many times greater than its organotropic, advantages, which from experience it is thought the other soluble salts do not possess to an equal extent. In general, from what has been previously said, it is obvious that in the early days of an acute infectious disease the maximum dosage is solely indicated, while in the late days of these diseases, or in subacute or chronic infections, smaller and more numerous injections are to be used.

Should symptoms of mercurialism appear at any time during the course of treatment, stop injections at once, and apply appropriate corrective measures, resuming injections if necessary upon the disappearance of these symptoms.

The following cases were cited: Tuberculosis, lobar and lobular pneumonia, typhoid fever and paratyphoid, cerebrospinal meningitis, erysipelas, infectious arthritis, chronic articular rheumatism, gonorrheal arthritis.

Conclusions: It is believed that results, coupled with those of the distinguished foreign observers above mentioned and of my colleagues in the Naval Medical Corps, mentioned in this paper, demonstrate the superlative value of mercury in the treatment of the infections cited, and make it strongly probable that its action in the case of all diseases of vegetable parasitic origin would be equally and as promptly curative. The secret of success is the administration of the largest dose possible, at the earliest moment possible, after the onset of the disease.

FRACTURES OF THE SPINE AND PELVIS.

DR. FREDERIC J. COTTON, Boston: They are common; they are serious; they are often misinterpreted or overlooked; there are no clean-cut specifications for diagnosis in either class; and, save for the question of death, or recovery, nothing is available as to prognosis. As to the chance of recovery of useful functions, or the influence of any treatment on this chance, you may look in vain in the standard text-books for so much as a word of real information. The laity are perfectly sure that no man's back is broken if he can move his legs,—and what the layman believes his doctor is very apt to pay attention to unless he has definite contrary views.

At least twice lately I have seen broken backs that the doctor said could not be broken because the man could walk.

The signs to be looked for are: local pain; local tenderness; local swelling (hematoma), not explained by a direct blow; deformity, not often a marked kyphos—usually only a change of curve—convexity where the spine should be flat—a convexity apparently involving several vertebrae. Remember that without bony damage the antero-posterior curves do not change. Nerve-root pain, and sometimes sensory disturbance, x-ray evidence. There is a feature of these cases that has been overlooked, though important,—the belly picture.

Displacements may be corrected by thick pads opposite the lower fragment,—gravity does the work.

Pelvic lesions fall very naturally into four broad divisions:—

1. Lesions of the spine and of the crest of the ilium.
2. Symphysis separations.
3. Fractures destroying the continuity of the pelvic ring, of various sorts.
4. Central luxations, so-called.

As to diagnosis of the fracture of the pelvic ring itself, there is one point I have only recently learned that I believe very important. If the rami are broken there will be first the known swelling and local tenderness behind Poupart's ligament, usually nearly opposite the femoral vessels, but there will also be a point of tenderness in the perineum.

As to central luxation. They have in common the smashing of the acetabulum. I personally have seen at least a dozen and a half cases. This is the fracture of the pelvis that calls for reduction,—that promises disability in proprtion, and only in proportion to our failure to reduce. Reduction is necessary and it requires real force to reduce.

There is a class in the books of fractures of the ischium alone. This thing does not happen.

THE CONDUCT OF A CASE OF LABOR.

FRANKLIN S. NEWELL, M.D., Boston: When the medical profession appreciates the fact that most of the serious obstetric complications are either preventable, or can be successfully treated, if recognized early, a great step in advance will be made.

Very few women have any conception of the necessity for care during pregnancy, and it is the duty of every obstetrician to instruct each patient who consults him in regard to its importance and the bearing which it may have not only on the outcome of the pregnancy but on her future health. A great majority of the bad results could have been avoided by proper, intelligent care on the part of the physician. It is pretty definitely proven at the present time that if pregnant women are under constant observation from an early stage of pregnancy and are receiving adequate attention, although the toxemias of pregnancy will arise from time to time, the occurrence of true eclampsia can almost always be prevented, the maternal mortality of this condition being 40% in the hands of the general practitioner and 5% or less in the hands of the specialist. Of course, to a certain extent, the difference in operative skill turns the scale in favor of the specialist, but the principal reason for the wide difference in the mortality is the fact that the specialist keeps his patient under observation.

Although our knowledge and our operative possibilities have increased markedly during the last generation, none the less the maternal mortality, due to childbirth, remains practically unchanged, and in addition there are still many children lost and mothers invalided, and the great majority of these bad results can be avoided, since there are comparatively few complications which cannot be foreseen and avoided by proper care during pregnancy.

The conduct of a case of labor may be properly considered under three headings: Care of pregnancy, the care of labor, and the care of the puerperium.

Ordinarily I do not interfere with a patient's diet. At each visit I take the blood-pressure, believing that a rising pressure is often the first sign of an impending toxemia, and that trouble can be prevented by eliminative treatment and a possible eclampsia warded off by careful observation. At about the end of the eighth month of pregnancy I make a careful physical examination to determine the relation between the size of the pelvis and the size of the child. If anything abnormal is discovered at any period of pregnancy, the patient is then put under appropriate treatment to meet the abnormality and minimize its dangers, and in serious cases the pregnancy may be ended, since, in my opinion, it is improper ever to run serious risks and to sacrifice the mother for the sake of a very problematical benefit to the child. In the presence of irregular contractions I stimulate the poor contractions by the use of strychnia, but never use pituitrin extract until the cervix is fully dilated. If the pain reaches a point at which the patient asks for an anesthetic, I have no hesitation in letting her have ether during the contractions, even in the first stage of labor, only sufficient being given to take the edge off the pain and not to interfere with the action of the uterus. Rectal examinations are made from time to time to ascertain the progress of the dilatation of the cervix and the descent of the head through the pelvis, but in the average case I make only one vaginal examination to check up the results of the other examinations.

I realize that I use forceps more often than is necessary in the delivery of my primiparae, but I believe that the average highly-strung woman makes more satisfactory convalescence and fears her future labors much less if her first labor is made as easy as possible and all unnecessary exhaustion is avoided. I feel, however, that it is improper to advocate such procedure unless the attendant has had a proper hospital training in obstetric operation and is properly equipped to undertake obstetric emergency work.

It is believed that pituitrin is too dangerous to be used before dilatation of the cervix is complete; that it should never be used to induce labor or before the cervix is either dilated or dilatable; that it should never be used when there is any disproportion between the size of the fetal head and the maternal pelvis. In the third stage of labor where the uterus does not contract well, it may be used as a substitute for ergot, but has proved somewhat disappointing in dealing with severe hemorrhage. It may occasionally prove very useful in bringing a high head down into the pelvis, and

making what would be a difficult operation a simple one, and for the man to whom any operative delivery is a serious matter, it will undoubtedly aid delivery if given during the second stage of labor with the head on the perineum, and obviate the necessity for operative delivery in many cases, although its action is by no means certain.

SYPHILIS, WHEN A CURE, AND HOW CAN WE PREVENT ITS MALICIOUS TRANSMISSION.

DR. H. E. THOMPSON, Bethlehem: It is claimed by some syphilographers that we should never pronounce a case cured on evidence obtained from either the Wassermann or Weil-Cobra test, for there is unmistakable and conclusive proof that the disease still lurked in the system in a given case after a full treatment with mercurials and salvarsan, followed by negative Wassermann and Weil-Cobra reactions. His great plea, both for country and city, was for publicity, and by no other means could we hope to make any great progress in eradicating the disease.

SOME ASPECTS OF HIGH BLOOD PRESSURE.

DR. CLAUDE M. SNEDEN, Littleton: All patients past thirty-five years of age who present themselves to the physician for treatment should have their blood pressure taken. Fifteen per cent. of all persons who consider themselves physically well are really unsound. The taking of frequent blood pressure readings in all pregnant women should be a routine practice. Toxemia of the kidneys can be diagnosed by high blood pressure fully six weeks before albumin shows in the urine.

INTESTINAL SHORT CIRCUIT FOR INTRA-ABDOMINAL TUBERCLES.

DR. GEORGE S. FOSTER, Manchester: The writer had had the pleasure of seeing many cases in Sir William Arbuthnot Lane's clinic at Guy's Hospital, London, and he is a firm believer in the treatment of the condition. He reported a number of cases operated by him in Notre Dame Hospital with very satisfactory results. He minutely described the technique of the operation.

Book Reviews.

Disease and Its Causes. By W. T. COUNCILMAN, A.M., M.D., LL.D., professor of pathology, Harvard University. New York: Henry Holt and Company. London: Williams and Norgate. 1913.

This volume, No. 68 in the Home University Library of Modern Knowledge, is a presentation, in brief and popularized form, of the substance of the author's teaching in pathology. It is not written for the profession, but for the educated laity who already have some elementary knowledge of anatomy and of physiology. Like the author's medical lectures it presents and emphasizes disease as a biologic phenomenon, as a manifestation of "life under conditions which differ from the usual." Most attention is given to the infections, and among the organic diseases to affections of the heart. There are a brief terminal glossary and index, but no bibliography. The work is vitalized by the author's personality of style and felicity of illustration, and should find a useful place in popular medical literature.

Disease-Bearing Mosquitoes of North and Central America, the West Indies, and the Philippine Islands. By C. S. LUDLOW, Ph.D., anatomist, Army Medical Museum. Washington: Government Printing Office. 1914.

This monograph, published as a bulletin (No. 4) from the office of the surgeon-general of the United States War Department, is an admirable entomologic classification and description of the pathogenic mosquitoes, abundantly illustrated with 27 excellent full-page plates and 30 figures in the text. The publication is of particular value in view of the important problem constituted by the mosquito in this country and its tropic possessions, and should prove of great use to military and civic surgeons.

Bacteriology for Nurses. By ISABEL MCISAAC, R.N. Second edition, revised. New York: The Macmillan Company. 1914.

This text-book in bacteriology for pupil nurses is based on a schedule of twelve two-hour laboratory exercises. In the main it is well written; but the chapter on the venereal diseases is characterized by the morbid exaggeration usually observed in writings by women on this subject. There are 24 good illustrations in the text.

Materia Medica for Nurses. By A. S. BLUMGARTEN, M.D. New York: The Macmillan Company. 1914.

This is an excellent text-book of materia medica. It is, however, too technical and elaborate for any but the most unusual nurse to master. Despite the author's ambitious preface, in which he expresses his aim to develop "trained observers of the effects of drugs," the fact remains that the vast majority of nurses do not need more knowledge of drugs than how to administer them accurately. The method of the book is strictly pedagogic, which therefore is hardly adapted for easy reading. It should prove a useful book of reference for nurses and a valuable manual for medical students.

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MEDICAL LEGISLATION.

THE futility and inefficiency of a majority of the laws relating to the public health passed by state legislatures has long been the subject of unfavorable comment by thoughtful students of health legislation. The average citizen has a firm belief that the enactment of laws is a remedy for all the ills of the body politic. Furthermore, he considers all medical questions as parts of a subject which is common knowledge and, consequently, perfectly easy to embody into laws. In investigating them less study seems to be called for than in the solution of the problems of finance and property. Therefore, when the representative takes his seat at the State House for the first time he resolves that he will not live supinely under the manifestly defective health laws of his state but will straighten out the situation forthwith by a proper law. Taking counsel with himself and, perhaps getting the assistance of a not too busy lawyer, he evolves a bill. This bill is subjected in due course to the criticism of a committee of the legislature, the members of which, although having the best of intentions, may know even less about matters medical than our representative. Public-spirited members of the medical profession urged thereto, for the most part, by the Committee on State and National Legislation of the Massachusetts Medical Society, attend the hearings of the committee and point out the weak spots of the measure. If the bill is favorably reported by the committee it runs the gamut of the Senate and House and may be put on the statute books before the people really interested know what is going on. Fortunately the bill is more often killed in committee.

Who is to differentiate between the essential and the non-essential matters requiring legislation; to give information, assistance, advice or expert services in framing bills? Instead of measures carefully planned by experts having a thorough knowledge of all the available facts both as to the needs of the citizens of the state, but, as well, of the experiences of sister states with the same sort of legislation, too often we have measures which are ill-considered by narrow-minded framers, scornful of others and regarding every problem as unique and suited specially for the statute books of their own state. Frequently personal and political influences are brought to bear to force bills through the legislature, and not rarely bills are so emasculated by amendments or compromises that after passage they are worse than nothing. More often than not little attention is given to the enforcement of a given health law. The legislators, perhaps, pass a bill as a party measure. The opposing side is beaten; the merits of the bill are overlooked. When finally engrossed it is soon forgotten and the legislature adjourns, to reassemble another year with a different membership.

Important questions affecting the public health, such as instruction in sex hygiene, vital statistics, abolition of the common drinking cup, vaccination, pure food and drugs, and housing laws should, without question, be studied and passed on by men and women who have had such problems within their ken. Teachers, social workers, judges, practical philanthropists, and administrative officers of correctional and reformatory institutions are fitted to give valuable advice to legislators, as well as are the members of the medical profession. Lack of time, money and the necessary machinery for getting the views of such of our citizens as may be of assistance in this way is responsible largely for our present haphazard, wasteful and unscientific methods of framing legislation in this field. We may look forward, however, to better things in the future because the Council on Health and Public Instruction of the American Medical Association established January 1, 1913, a legislative laboratory or bureau for securing and supplying information on laws, bills, model laws, court decisions, or any subject relating to public health. Here state medical societies, the

legislator or the committee of the legislature may obtain information on health matters, and they may use it or not as they please. In any event, they will not have to grope in the dark as at present. Time is necessary, of course, in which to gather statistics from the many states and to codify and standardize them. We learn from the thoughtful address of the secretary of the Council on Health and Public Instruction,[1] read before the Conference on Public Health Legislation in Chicago, last February, that a good beginning has been made under the supervision of a well-trained lawyer who has been placed in charge of the bureau.

The question of the relative importance of the various topics comprised in public health legislation is a most interesting one, and must vary more or less with the locality. The writer of the paper suggests the following as a tentative list of subjects as a basis of discussion:—

1. Board of health law.
2. Vital statistics law.
3. Law authorizing sanitary survey of the state and making appropriation for it.
4. Practice act, including regulation of midwives and all sects involved in treating the sick for compensation.
5. Law authorizing city and county health organizations with definite relations to each other and the state board.
6. Food and drugs act.
7. Water supply, sewerage and waste disposal.
8. Milk and dairy law.
9. Sanitary and health inspection of schools.
10. Housing law or industrial disease law.

Whatever our individual views may be as to the order in which these subjects should be approached, all will agree that the Council on Health and Public Instruction has made a distinct step in advance in establishing the legislative bureau, which promises to be of so much assistance to state medical societies and to state legislatures in formulating medical legislation in future in a more intelligent and more scientific manner.

The secretary of the Council on Health urges the state societies, through their legislative committees, to consider carefully the advisability of adopting a definite policy and fixed program concerning medical legislation to the end that all efforts may be concentrated upon essential measures until they have been secured.

[1] Sixty-six Years of Medical Legislation, Frederick R. Green, M.D., Chicago, 1914.

The Massachusetts Medical Society has pursued such a course during the legislative season just closed with satisfactory results, and consequently has exerted a very considerable influence both in nullifying bad bills and in favoring desirable legislation, as anyone may see by reading the report of the Committee on State and National Legislation in the JOURNAL.[2] This committee having a membership which is practically the same from year to year, is able to map out a fixed policy and to pursue it, subject always to the vicissitudes of legislation on Beacon Hill. It is to be hoped that with the aid of the Legislative Bureau it will be even more efficient.

SARATOGA SPRINGS: AN AMERICAN SPA.

Now that the state of New York has obtained possession of the property containing these famous mineral springs, there is no reason why, on account of the wealth of its natural resources, Saratoga should not take its place among the great spas of the world. Indeed, by reason of the unequalled variety of these resources, it may, under intelligent management, eventually become the greatest of them all. Already, in the short time that the springs have been under state care, much has been accomplished. Consequent upon the measures taken by the commissioners of this new state reservation, under the provisions of the statute, the various springs have been restored, and are again flowing and spouting as in the old days before the time when, under the blighting influence of private greed, the pumping of artesian wells was begun.

In the annual report of the commissioners, transmitted to the legislature at its session of 1914, it is stated that Dr. Simon Baruch, professor of hydrotherapy in the medical department of Columbia University, became so interested in the state's development of Saratoga Springs as to offer to investigate and report on the present condition, from a medical point of view, of the English and Continental spas of importance. At Bad Kissengen, Dr. Baruch noted indications of efficiency in construction, organization and management, and found that the Royal Bavarian government had placed in charge of the laboratory and direction of the spa, a distinguished scientist, Dr. Paul Haertl.

[2] BOSTON MEDICAL AND SURGICAL JOURNAL, July 9, 1914, p. 79.

He arranged with the latter to come to Saratoga Springs, if the consent of the government could be secured, and on the application of the commission, seconded by the U. S. Department of State, leave of absence for the purpose was granted Dr. Haertl. Accordingly he came, and as he had made a very thorough study, with equipment and facilities furnished by his government, of the whole question of mineral water supply and development, he was able to give the commissioners much information respecting the value and possibilities of the properties taken by the state. The view of the situation taken by Dr. Haertl,—which is confirmed by the opinion of American authorities,—was most encouraging. In the course of his report he says:—

"In view of the fact that about fifteen years of pumping has not exhausted these springs beyond restoration, I am confident that the more moderate usage of the water for therapeutic purposes can never exhaust the supply. The methods which I have suggested for conserving the gas offer an additional warrant for this view. These considerations justify the opinion, which I do not hesitate to pronounce, that future demands upon the springs which are certain to arise when Saratoga becomes the pronounced health resort which its mineral springs and environment promise, will be amply responded to by the natural supply of water and gas within its subterranean area."

The most important result of his visit was to confirm the opinion that all the Saratoga mineral waters are suitable for bathing purposes. Mineral water baths, the commissioners state, are given at many scores of places in Europe, which have large establishments, the aggregate cost of which is over $50,000,000, but practically all of which are paying good returns on the investment. There can be no doubt, therefore, they say, as to the desirability of the early construction and equipment of facilities for properly utilizing these waters, which in combined variety, quality and quantity are beyond those of other resorts. There must be modern coveniences for supplying the different waters under one roof and for properly heating them to the varying temperatures at which physicians prescribe them for drinking. It is also desirable to build bathing-houses, equipped with the requisite facilities and appliances for baths, as well as for the incidental treatments employed in connection with them, upon a scale comparable with similar establishments of Europe.

In the *Albany Medical Annals* for May there is published an interesting address delivered before the Albany County Medical Society by Dr. Albert Warren Ferris, superintending director of the state reservation at Saratoga, in which he gives the history of the springs and some account of their characteristics and of what is being done for their further development. The first white man to visit a Saratoga spring was Sir William Johnson, the victorious commander at the battle of Lake George, who, ill and disabled by an old gun-shot wound, was conveyed thither by friendly Indians in 1767. The spring to which he was brought was the High Rock, which was called the "Medicine Waters of the Great Spirit." Obeisance was made to the Manitou of the spring, and then the "White Brother of the Mohawks" partook of the water of the healing stream as it spouted through the orifice of the High Rock cone, and bathed in its waters. The old cone, formed by accretions deposited from the water, stands today where Sir William saw it, and is now protected by a pavilion and surrounded by the little High Rock park.

The state commissioners announce that arrangements are now being made for the administration of baths similar to those of Nauheim; also that several of the springs will be accessible all winter, and one bath-house remain open all the year. It is hoped to make Saratoga a winter, as well as a summer resort. The climate is exceptionally fine at that season, for while the cold is often intense, the air is so dry that only the exhilarating effect of the low temperature is experienced. In the way of winter sports every possible facility is offered.

EXPANSION, WORK, AND AIMS OF THE ROCKEFELLER INSTITUTE.

In order that further opportunities may be afforded for the more complete investigation of the nature and causes of human disease and methods of its prevention and treatment, Mr. John D. Rockefeller has just donated $2,550,000 to the Rockefeller Institute for Medical Research.

Of the sum just donated a part will be utilized to purchase additional land in New York

so that the institute will have acquired the entire tract where its buildings are now located, between 64th and 67th Streets on Avenue A, extending through to East River—about four acres. The remainder will be used to erect and equip additional laboratories, buildings and plant, and to insure the proper maintenance and conduct of the extended work.

This gift of $2,550,000 is in addition to a special fund of $1,000,000 which Mr. Rockefeller has provided in order that the institute may establish a department of animal pathology. Dr. Theobald Smith, now professor of comparative pathology in Harvard Medical School, is to become director ot the new department.

It will be the purpose of this branch of the institute's work to give special attention to the study of maladies such as hog cholera, foot and mouth disease, and diseases of poultry, which are of such immediate and practical concern to farmers, and the elimination of which is so important. This will be the first enterprise of this kind upon an adequate basis to be established in this country. The results of its work should eventually be of great value in improving the health of cattle and other farm animals.

Mr. Rockefeller's previous gifts to the institute has amounted to practically $9,000,000, exclusive of real estate in New York City, so that the endowment of the institute will now approximate $12,500,000.

The Rockefeller Institute will, with the new gift, now become the most amply endowed institution for medical research in the world. In 1902, when the institute was founded, there was not a single undertaking of the kind in this country. England had the Lister Institute, Germany the Institute for Infectious Diseases, France the Pasteur Institute, and Russia the Royal Military Institute at St. Petersburg. Since 1902 a number of other research laboratories have been established in this country, including several in Chicago.

In addition to the laboratories, there is connected with the institute a hospital with every improved facility for the treatment of patients afflicted with diseases at the time under special investigation. For the treatment and study of contagious diseases,—a most important phase of the institute work,—there is a separate building with isolation rooms.

The aims of the Rockefeller Institute and the lines along which its future work,—upon an even more comprehensive basis,—will be conducted, are indicated by some of its practical achievements already accomplished, such as: the serum treatment of epidemic meningitis; the discovery of the cause and mode of infection of infantile paralysis; the surgery of blood vessels through which blood transfusion has become a daily life-saving expedient; the safer method of administering anesthetics by intratracheal insufflation; the skin or luetic reaction for syphilis; and the cultivation of the parasite of rabies.

MEDICAL NOTES.

SWISS LEGISLATIVE EUGENICS.—Report from Geneva, Switzerland, on July 11, states that the Swiss Society of Public Utility for Women is demanding the requirement of health certificates for brides as evidence that they are fit for motherhood. Hitherto attempts at legislative eugenics have been directed chiefly against venereal disease in the male. The difficulty of conscientiously affirming of any nullipara that she is fitted for child-bearing is obvious to all obstetricians of experience.

INVENTION OF THE OPTOPHONE.—Report from London on July 6 states that Dr. Fournier d'Albe has recently demonstrated before the Royal Society his invention, the optophone, an apparatus to enable the blind to read by transforming light waves into sound waves.

"The device consists of a perforated disk which rotates in front of a powerful Nerust lamp. The type to be read is placed facing the light upon a rest. A small, intensely bright line of light, passing through the holes in the disk, travels from one letter to the next, and the type reflects the light onto a selenium bridge. Each letter gives a characteristic sound, which is heard by means of a telephone. The reader must know the sound of each letter to be able to follow the print."

AMERICAN MEDICINE GOLD MEDAL AWARD.—It is announced by the trustees of the American Medicine Gold Medal Award that the medal for 1914 has been conferred on Dr. George W. Crile, of Cleveland, Ohio, as the American physician who in their judgment "has performed the most conspicuous and noteworthy service in the domain of medicine and surgery during the past year.

American College of Surgeons.—A meeting of the American College of Surgeons was held in Philadelphia on June 22, with an attendance of 800 members. Over $100,000 were subscribed towards a fund for the establishment of a permanent building for the institution in Washington, D. C., and 1100 new fellowships were conferred, making the total membership over 3000.

National Mouth Hygiene Association.—At the closing session on July 11 of the annual meeting of the National Mouth Hygiene Association at Rochester, N. Y., Dr. Harvey W. Wiley was elected president; Drs. W. A. Evans, of Chicago, Oscar Dowling, of New Orleans, William R. Malone, of New York, and Rupert Blue, of Washington, vice-presidents; and Dr. W. G. Ebersole, of Cleveland, secretary and treasurer for the ensuing year.

National Dental Association.—At the closing session on July 10 of the eighteenth annual convention of the National Dental Association, in Rochester, N. Y., Dr. G. E. Mitchell, of Haverhill, Mass., was elected president; Dr. J. V. Couzett of Dubuque, Iowa, vice-president; and Dr. H. L. Banzhof, of Milwaukee, Wis., secretary and treasurer for the ensuing year.

American Climatological and Clinical Association. — At the thirty-first annual meeting, held in Atlantic City, N. J., on June 19 and 20, the American Climatological Association changed its name to the American Climatological and Clinical Association, and voted to meet in San Francisco, Cal., in 1915. Dr. Henry Sewall, of Denver, Colo., was elected president and Dr. A. K. Stone, of Boston, and Dr. J. Alexander Miller, of New York, were elected vice-presidents. Dr. Guy Hinsdale, of Hot Springs, Va., was elected secretary.

A British Legal Centenarian.—William Augustus Gordon Hake, who died on July 13 at Brighton, England, is said to have been born in April, 1811, at St. David's Hill, Exeter, Devonshire. He became a barrister in 1835 and for many years had been the senior member of the British bar. He was educated at the University of Paris.

A Centenarian.—Maretra Crise, who died on July 9 at Trente, Somersett County, Pa., is said to have been born in 1813. Though an invalid since childhood, she survived two husbands, and retained an active mind despite her physical infirmities.

Bubonic Plague in New Orleans.—Another death from bubonic plague was reported on July 10, and another case on July 19, at New Orleans, La., making a total of 7 cases and 3 deaths since the outbreak of the infection in that city on June 27. On July 16 three plague infected rats were caught and destroyed.

Sick-Rates at Vera Cruz.—Report from Washington, D. C., on July 10 states that the sick-rate among United States soldiers and marines at Vera Cruz, Mexico, for the week ended July 8 was 2.47, as against 2.39 for the preceding week.

BOSTON AND NEW ENGLAND.

Warning to Boston Milk Consumers.—Dr. Francis X. Mahoney, chairman of the Boston board of health, has recently issued a warning to all milk-purchasers in this city, on account of the discovery of a case of scarlet fever on a farm supplying milk to a part of West Roxbury. The circular urges the pasteurization of all milk from doubtful sources at this season.

Smallpox in Marlboro.—Four new cases of smallpox were discovered in Marlboro, Mass., on July 10, making a total of 11 since the outbreak of the present epidemic. Over 7000 residents of the town have been vaccinated.

New Winchester Hospital.—Plans have been accepted for the new Winchester (Mass.) Hospital, whose erection will be soon undertaken.

"The operating wing is at the north and two stories high; the administrative portion, which is three stories and a half high, is in the centre, and the wing to the south with the spacious two-story airing balcony for patients faces the south, thus giving those who most need it the sun all day.

"The ground floor has an ambulance entrance and receiving and dressing room for accident cases, boiler, coal room, laundry, large light kitchen, a serving room, dining room, nurses' class room, store room, men's room with bath and provision for laboratories, Roentgen ray and isolation rooms.

"On the first floor are located the operating department, offices and wards. In the main building on the second floor are rooms for the superintendent, maternity department and nursery. The building is to be fireproof throughout and the floors will be of marble or terrazo."

A LIVING CENTENARIAN.—Mrs. Sarah Banks Pillsbury, of Parsonsfield, Me., is said to have been born in June, 1814. Her health is excellent, and she maintains an active interest in all topics of the day.

HOSPITAL BEQUESTS.—The will of the late Henry K. Barnes of Boston, which was filed on July 14 for probate in the Suffolk county registry, contained a bequest of $1000 to the Boston Floating Hospital.

The will of the late C. James Connelly, filed for probate in Boston on July 11, contains bequests of $200 to the Carney Hospital, St. Elizabeth's Hospital, and St. Margaret's Hospital, Boston.

The will of the late Susan C. Dove, of Andover, Mass., which was recently filed for probate, contains a bequest of $5000 to the Massachusetts General Hospital.

The will of the late Henrietta T. Rand, of Brookline, Mass., which was allowed at Dedham, Mass., on July 16, contains a bequest of $1000 to the New England Peabody Home for Crippled Children.

CASES OF INFECTIOUS DISEASES reported to the Boston Board of Health for the week ending July 14, 1914: Diphtheria, 49, of which 1 was non-resident; scarlatina, 14, of which 3 were non-residents; typhoid fever, 6, of which 1 was non-resident; measles, 58, of which 8 were non-residents; tuberculosis, 33. The death-rate of the reported deaths for the week was 13.13.

NEW YORK.

CONVICTION OF A CHRISTIAN SCIENCE HEALER.—The appellate division of the New York Supreme Court on July 10 confirmed the conviction of Willis V. Cole, the Christian Science healer who in March, 1912, was found guilty before a jury of practicing medicine without a license and fined $100, and whose case was appealed. "In the case at the bar," Justice Clarke said, in delivering his opinion, "the whole concern of the court is whether the defendant was convicted of practicing medicine without being licensed and registered, and whether the conceded acts were the practice of the religious tenets of any church." The justice concluded that the acts complained of constituted the practice of medicine, and were not the practice of the tenets of any church. To authorize the defendant to administer the treatment which he conceded he did, he first must have been duly licensed and registered, in accordance with the provisions of the public health law. The law under which the action was brought declares that a person practices medicine who holds himself as being competent to diagnose and treat disease, and who shall offer or undertake, by any means or method, to diagnose, treat, or prescribe for such disease or ailment. The stipulation is added, however, that this article shall not be construed to affect "the practice of the religious tenets of any church."

APPOINTMENT OF DR. OSCAR TEAGUE.—Health Officer of the Port O'Connell has appointed Dr. Oscar Teague, of the Cornell University Research Laboratory, director of the new bacteriological laboratory at Quarantine. It is announced that this appointment was made especially with the view of protecting New York from the possibility of infection from bubonic plague. In 1911 Dr. Teague was sent from Manila to Mukden as the American delegate to the International Plague Conference held there when the disease was epidemic in Manchuria. Previous to this, from 1908, he served in the bacteriological department of the Bureau of Science, Manila, and collaborated with other members of the bureau in the production of "Studies in Bubonic Plague and Plague Immunization." While in this service he had extensive experience with Asiatic cholera and leprosy, and later was made bacteriologist at the asylum for lepers. He also made a tour through the Philippines for the purpose of collecting leprosy subjects, and sent nearly 200 of them to the asylum on the Island of Culion.

VACATION SCHOOLS.—In view of the fact that during the past year 388 children were killed by vehicles in the streets of New York, and that in the month of June, 28 of these fatalities occurred, the vacation schools serve one good purpose, if of no other value, that of keeping the children off the streets for at least part of the

time. This year, in addition to the official vacation schools of the Department of Education, a number of the large Episcopal churches are maintaining a group of ten such schools, with an attendance of more than 2,000 pupils and a corps of 40 teachers, some from the public schools and some from among male and female college students. In the curriculum, calisthenics and industrial work are special features.

City Health Department Moving Pictures.—The City Health Department is now carrying on its free moving pictures in the parks and on the recreation piers of the various boroughs. Each exhibition consists of four reels of films: The Story of a Consumptive, The Production and Handling of Milk, The Little Cripple, and The City Beautiful; and between the films a large number of instructive lantern slides are shown, and thousands of antituberculosis leaflets distributed. In the Manhattan and Bronx exhibitions the department is assisted by the tuberculosis committee of the Charity Organization Society, and in those in Brooklyn and Queens, by the corresponding committee of the Brooklyn Bureau of Charities.

Violent Deaths.—The records of the coroner's office show that during the first six months of the year there were 44 cases of homicidal shooting, as against 53 cases in the same period of 1913, and 40 suicides by shooting, as against 49 last year. The total number of homicides was 72, as compared with 79 in 1913. There was a considerable reduction in the number of deaths from automobiles, the figures being respectively 68 (1914) and 99 (1913).

Roof Playgrounds.—The first roof playground on a New York apartment house was opened on July 2 on top of the Hendrik Hudson, a large apartment house at Riverside Drive and 110th Street. Park Commissioner Cabot Ward was present on the occasion and made an address, in which he stated that he had drafted a law providing that all apartment and flat houses built in future shall have the roofs so constructed as to allow playgrounds to be added. At present, he said, an astonishingly small number of the roofs of such buildings were suitable for the purpose, and the same was true of the armories of the city; though most of the latter had a small space which could be utilized for playgrounds. In the time to come he believed that roofs were going to be one of the most important factors in solving the playground factor, and thus keeping the children off the dangerous streets. Borough President Marks of Manhattan has also taken up the matter of roof playgrounds and has addressed a letter to more than fifty architects in which he asks them to coöperate with him in stimulating interests in the placing of playgrounds and gardens on the roofs of suitable buildings in all parts of Manhattan, and also in the encouragement of the open-air sleeping porch. "Not only," he says, "will we be able by this development to improve health conditions, but also to relieve the congestion of the streets. As you know, there is about three times as much space on the roofs of the city as there is on the streets, and most of this space has not been utilized up to this time. I have suggested to the superintendent of buildings that only the actual necessities for safety in construction be insisted upon, and that the public in this way be encouraged to increase the use of roofs in a safe and sane way." Mr. Marks has also formally requested the American Institute of Architects and the New York Society of Architects to appoint committees to develop his plan.

Appointments, Department of Health.—Twelve sanitary supervisors, state department of health, have been appointed from the list certified by the civil service commission, and the department is much gratified to have obtained the services of men whose past work has so fully qualified them for the important duties of this office. Among them are Drs. Edward Clark, F. W. Sears and Frank Overton. Dr. Clark has been deputy commissioner of health, Buffalo, and established the milk bureau of that city. Dr. Sears was formerly professor of histology and pathology in Syracuse Medical College, and is now health officer of Syracuse. Dr. Overton, now health officer of Patchogue, is the author of "Applied Physiology" for schools, and a lecturer on public health topics.

"Safe and Sane" Driving.—A correspondent of the *New York Times* very aptly writes: "Judging from the press reports from throughout the country, the movement for a safe and sane Fourth seems to have been eminently successful this year; the list of dead and injured being very small as compared with that of previous years. By the same token, the list of dead and injured chargeable to unsafe and 'unsane'

automobile driving would compare favorably with the death list of a modern battlefield. Now that the 'little' children have been made 'safe and sane,' is there not an excellent opportunity to commence on the 'big' children?''

Current Literature

NEW YORK MEDICAL JOURNAL.

JULY 4, 1914.

1. ANDERS, J. M. *The Treatment of Obesity.*
2. *FRIEDENWALD, J., AND ROSENTHAL, L. J. *The Treatment of Amebic Dysentery with Emetine.*
3. BRYANT, W. S. *Radium in Middle Ear Deafness Caused by Chronic Suppuration.*
4. BABCOCK, R. H. *Cardiac Hypochondriacs.*
5. MAYS, T. J. *The Control of Pulmonary Consumption.*
6. FISK, E. L. *A Sensible Diet for the Average Man and Woman.*
7. CUNNINGHAM, W. P. *Cutanea Lues Insolita.*
8. KENNEDY, F. *The Effects of Narcotic Drug Addiction.*
9. STEELE, G. *A Commissioned Veterinary Corps for the Army.*
10. NATHAN, D. *Circumtonsillar Abscess.*

2. Friedenwald and Rosenthal review the history of the treatment of amebic dysentery with emetine and report nine cases of their own. They find emetine a specific in this disease, its effect being rapid and striking. It produces no nausea or vomiting or other unfavorable symptoms. Other forms of dysentery are not favorably influenced by emetine, so that its administration is of diagnostic as well as therapeutic value. Recurrence after apparent cure is not infrequent, so that it is advisable to treat all cases showing a tendency to relapse. The dose used by the writers was one-fourth to one-third grain of the hydrochloride hypodermically, repeated every twenty-four hours for a week or more. In some cases the dose was increased gradually up to one grain.

[L. D. C.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

JULY 4, 1914.

1. ANDERSON, J. F. *Some Unhealthy Tendencies in Therapeutics.*
2. TODD, F. C. *Research in Ophthalmology, and the Training of Ophthalmologists. Their Promotion and Encouragement Through the Establishment of Teaching Fellowships.*
3. BAILEY, P. *Painless Tumors of the Spinal Cord.*
4. *REHFUSS, M. E., BERGEIM, O., AND HAWK, P. B. *Gastro-Intestinal Studies. I. The Question of the Residuum Found in the Empty Stomach.*
5. VERHOEFF, F. H. *Chronic Ocular Tuberculosis. Necropsy Findings in a Case in Which Death Was Due to Tuberculosis of the Hypophysis Cerebri.*
6. BYERS, W. G. M. *Tumors of the Optic Nerve.*
7. HOLDEN, W. A. *Ocular Manifestations of the Toxemia of Pregnancy. Clinical Report of a Case.*
8. FRANCIS, L. M. *Two Cases of Acute Retrobulbar Neuritis. Associated with Marked Acetonuria.*
9. SIMPSON, W. L. *A Method of Closing Perforations of the Septum of the Nose.*
10. MARSH, C. D. *Supposed Poisonous Properties of Chestnuts Grown on Trees Affected with Chestnut Blight.*

4. These investigators found by the examination with a new metal weighted stomach tube that the accepted limit of the normal residuum of the empty stomach as 20 c.c. is false. The examination by means of the old stomach tube, as demonstrated by Harmer and Dodd, is entirely inadequate. The method of examination by means of the new modified stomach tube is the only satisfactory method of determining the complete residuum. On a series of healthy medical students the residuum in every instance exceeded the accepted limit, and in several instances was above 100 c.c. without there being any evidence of gastro-intestinal or general disorders.

[E. H. R.]

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

MAY, 1914.

1. *RIESMAN, D. *Medical Diagnosis in Relation to Surgery.*
2. *ELSNER, H. L. *The Association of Uterine Growths with Goitre; Typical and Atypical Exophthalmic Goitre.*
3. *KENNEDY, F., ELSBERG, C. A., AND LAMBERT, C. I. *A Peculiar Undescribed Disease of the Cauda Equina.*
4. *WARTHIN, A. S. *Primary Tissue Lesions in the Heart Produced by the Spirocheta Pallida.*
5. *KEYS, E. L. *The Mechanism of Prostatic Retention.*
6. *LICHTY, M. J. *Hypertension: A Report of Cases under Prolonged Observation, and a Protest against Some Ideas.*
7. *TALLEY, J. E. *The Electrocardiograph as a Clinical Instrument.*
8. *MOSS, W. L. *A Simple Method for the Indirect Transfusion of Blood.*
9. *HUNT, R. *The Rôle of the Carotid Arteries in the Causation of Vascular Lesions of the Brain: With Remarks on Certain Features of the Symptomatology.*
10. *SMITHIES, F. *A Study of the Value of the Quantitative Estimation of Dissolved Albumin in Gastric Extracts (Wolf-Junghans' Test) in the Diagnosis of Gastric Cancer.*
11. *CRUICE, J. M. *Jaundice in Tuberculosis.*
12. *CECIL, R. L. *Hyaline Degeneration of the Islands of Langerhans in Non-diabetic Conditions.*
13. *YAWGER, N. S. *Alcoholism and Epilepsy, Also So-Called Acute Alcoholic Epilepsy.*

1. Riesman writes to emphasize the importance of examination by an internist before operation, not only in obscure but also in apparently simple surgical cases.

2. Eisner calls attention to the association of uterine growths with goitre, and reports striking illustrative cases, especially with symptoms of atypical exophthalmic goitre.

3. Kennedy, Elsberg and Lambert report five cases characterized by paralysis of the bladder and rectum, a segmental palsy of the anterior tibial muscles of the lower motor neuron type, and in a majority loss of sensibility in the affected root areas, believed to be examples of a toxic neuritis of the caudal nerve roots.

4. Warthin contributes a description of syphilitic heart lesions based upon a study of two hundred hearts, fifty of congenital syphilis and one hundred and fifty of acquired syphilis. Both parenchymatous and interstitial lesions are found, each of several types. It is concluded that syphilis, both congenital and acquired, is the most important etiological factor in the production of cardiac disease, both endocardial and myocardial.

5. Keys discusses the mechanism of prostatic retention, concluding that elevation of the inferior lip of the neck of the bladder forms a mechanical obstruction, and that in prostatectomy the chief object should be the obliteration of this obstacle.

6. Lichty reports cases of hypertension observed for a number of years. From these he shows that, while some cases of hypertension rapidly grow worse, others with tension no less high continue for long periods without inconvenience. He finds that where hypertension exists without other manifestations of disease the outlook is the most favorable, when it is associated with manifestations in one organ it is more serious, and that where there are symptoms arising from more than one organ, as from both renal and cardiac insufficiency, the prognosis is most serious. The readiness with which cases respond to treatment is of great significance in the prognosis.

7. Talley's article is a short general description of the principles of the electrocardiograph and its clinical applications which may be recommended to those who have no previous knowledge of the instrument.

8. Moss describes a method of obtaining blood from a donor, defibrinating it, and injecting it intravenously into the patient. While this method is theoretically less to be recommended than direct transfusion, its applicability to cases where a skilled surgeon is not available should provide it a certain field of usefulness.

9. Hunt calls attention to the occurrence of diminished pulsation of the carotid artery on the affected side as an occasional accompaniment of cerebral disease of vascular origin.

10. Smithies concludes that the test for dissolved albumin in gastric contents is more constant in cases of cancer of the stomach than the absence of free hydrochloric acid, the presence of lactic acid or the glycyltryptophan test, being present in 80% of his series. He finds, however, that simple gastric and duodenal ulcers, especially when accompanied by pyloric stenosis, may give confusing responses, perhaps from the presence of blood.

11. Cruice reports cases of jaundice in tuberculosis, and concludes tentatively that this is due to pressure of tuberculous lesions upon bile ducts either within or without the liver.

12. Cecil reports six cases of hyaline degeneration of the islands of Langerhans in which there was no evidence of diabetes, and suggests that such degeneration may occur up to a certain point without causing diabetes, but that when islands beyond a certain number are involved, diabetes ensues. In all of these cases there was hyaline degeneration of the glomeruli of the kidneys.

13. Yawger contends that the importance of alcohol in the etiology of epilepsy has been overestimated.

[F. W. P.]

JUNE, 1914.

1. *FRAZIER, C. H. *Sarcoma of the Stomach.*
2. *HAYHURST, E. R. *Critical Examination of One Hundred Painters for Evidence of Lead Poisoning.*
3. *ARMSTRONG, G. E., AND MULLALY, E. J. *Fatal Gastro-intestinal Hemorrhage.*
4. *BANCROFT, F. W. *The Process of Bone Repair Following Trauma.*
5. EUSTIS, A. *Diabetes Mellitus and Its Differentiation from Alimentary Glycosuria.*
6. WALLS, F. X., AND GOLDSMITH, A. A. *Chloroma, with Report of a Case of the Myeloid Variety.*
7. *REHFUSS, M. E. *A New Method of Gastric Testing, with a Description of a Method for the Fractional Testing of the Gastric Juice.*
8. HURWITZ, S. H. *Osteitis Deformans (Paget) Involving a Single Bone: Report of a Case.*
9. *BURNS, N. E. *Valvular Heart Disease Considered as a Contributory Etiological Factor in Pulmonary Tuberculosis: A Complication of the First Magnitude.*
10. *POTTENGER, F. M. *Observations on the Classification and Treatment of Hemoptysis.*
11. KILDUFFE, R. *A Case of Congenital Absence of the Lower Half of the Inter-auricular Septum.*

1. Frazier reports a case of sarcoma of the stomach with resection of the tumor and without recurrence of the disease at the last report ten months later. Sarcoma of the stomach, it is concluded from the literature, forms only 2% of the primary malignant disease of that organ.

2. Hayhurst has made a careful study of one hundred painters of the best type and condition for history, symptoms, signs and tests of plumbism. In seventy of these some evidence of chronic lead poisoning was found. A lead-line was present in nineteen.

3. Armstrong and Mullaly report five cases with autopsies to emphasize the occurrence of fatal gastro-intestinal hemorrhage without demonstrable lesions of the mucosa.

4. Bancroft, from experimental studies, describes repair of fractures by connective tissue from the medullary cavity and the Haversian canals, as well as from connective tissue continuous with the periosteum.

7. Rehfuss describes methods of testing the functions of the stomach by modifications of Einhorn's procedures. He has devised an improved capsule for the collection of samples of gastric contents and a new tip for the duodenal tube.

9. Burns combats the teaching that heart disease in some measure protects the subject against pulmonary tuberculosis. His observations have shown that in patients with third stage pulmonary tuberculosis signs of organic heart disease occur in approximately 15%.

10. Pottenger emphasizes the observation that hemoptyses in his sanatorium experience occur in groups, several patients being affected at the same time, presumably on account of climatic conditions. He describes hemoptysis of four types: a frank hemorrhage where a vessel of some size is opened, bleeding coincident with the expulsion of a necrotic mass, slight tinging of the sputum perhaps from small vessels in the wall of a cavity, and continued raising of mouthfuls of blood, probably from congestion of foci of disease. In treatment it is urged that morphia, if used at all, be given only in small doses. Veratrum viride, nitroglycerin and pituitrin are favored. Artificial pneumothorax is mentioned as of value in hemoptysis of the first two types. [F. W. P.]

THE ARCHIVES OF INTERNAL MEDICINE.

JUNE, 1914.

1. *HINMAN, F. *The Value of Hexamethylenamin as an Internal Antiseptic in Other Fluids of the Body Than Urine.*
2. *MCGUIGAN, H. *Hexamethylenamin.*
3. SEWALL, H. *Some Relations of the Brain and of the Olfactory Apparatus to the Processes of Immunity.*
4. *ROSS, E. L. *Metabolism in Dementia Precox.*
5. THOMPSON, L. *The Titration of Wassermann Reagents.*
6. *KRUMWIEDE, C., JR., NICOLL, M. JR., AND PRATT, J. S. *Attempts to Produce Scarlatina in Monkeys.*
7. *HESS, A. F. *German Measles (Rubella): An Experimental Study.*
8. CRAIG, C. F. *The Differential Diagnosis of the Intestinal Entamebae of Man.*
9. *FITZ, R. *Study XXI: The Immediate Effect of Repeated Doses of Theobromin, Sodium Salicylate and Theocin on Renal Functions in Acute Experimental Nephritis.*
10. OPPENHEIMER, A., AND OPPENHEIMER, B. S. *Three Cases of Adams-Stokes' Syndrome with Histological Findings.*
11. *BOGGS, T. R., AND SNOWDEN, R. R. *The Intrameningeal Treatment of Tabes and Cerebrospinal Syphilis.*

12. *WILLIAMS, W. R. *Twenty-Three Cases of Pneumonia Treated with Anti-pneumococcus Serum.*

1. Hinman reports on a study of the value of hexamethylenamin as an internal antiseptic in normal and pathological body fluids. This drug is dependent on the liberation of formaldehyde for its antiseptic action. The writer finds that it is not converted into formaldehyde in any of the normal alkaline fluids of the body, and therefore that it can be of no prophylactic value in any of these fluids. After some infections of these fluids there may be a change in reaction sufficient to produce slight liberation of formaldehyde, but probably not enough to give antisepsis. In localized infections of pronounced acidity hexamethylenamin is not taken into them from the circulation in amounts to furnish formaldehyde in antiseptic strength. The therapeutic use of this drug as an internal antiseptic is justified for urinary conditions alone, and then only when it is excreted into an acid urine.

2. McGuigan and Hess conclude from their investigations that, after the administration of hexamethylenamin, free formaldehyde appears only in the gastric juice and acid urine, not in other secretions or in the blood, even with dialyzing tests. The liberation results from the acid reaction only and not from cell action. The only apparent indication for the internal administration of the drug, therefore, is in infections of the urinary tract.

4. Ross studied the metabolism of nitrogen, sulphur, phosphorus calcium and magnesium in five cases of dementia precox. He found normal metabolism of all these elements except sulphur, which showed abnormal metabolism in the acute cases, indicating reduced power of oxidation. In the chronic cases there were less pronounced abnormalities in sulphur metabolism, indicating partial deficiency.

6. Krumwiede, Nicoll and Pratt were unsuccessful in attempts to produce scarlet fever in monkeys and baboons by the faucial inoculation of streptococcus cultures or unfiltered exudates and discharges from scarlet fever cases, or by the intraperitoneal injection of filtrates of such exudates and discharges and of large quantities of blood.

7. Hess studied the blood in a small number of cases of German measles and found that there was a definite increase in the lymphocytes even before the appearance of the exanthem. This lymphocytosis may serve to differentiate rubella from scarlet fever, which is associated with a polynuclear leucocytosis in its early stage.

9. Fitz found that repeated small doses of theobromin, sodium salicylate and theocin in acute experimental uranium nephritis in rabbits caused an immediate increase in the output of urine, chloride and nitrogen, and did not diminish the excretion of phenolsulphonephthalein. In acute experimental potassium bichromate nephritis, such doses increased the output of urine and of chloride, but diminished that of phenolsulphonephthalein. The later effect of these doses was the production of renal fatigue in which the kidneys were no longer able to react. The cases of nephritis were of moderate severity. In a few studies made on animals with an extreme grade of nephritis, these diuretics were not effective.

11. Boggs and Snowden report five cases of tabes dorsalis and three of cerebrospinal syphilis in which salvarsan was administered both intravenously and intraspinally. They consider the intraspinal method valuable. After its use their patients were uniformly relieved from pain and there was definite improvement in locomotion, nutrition improved and the psychic effect was marked. The cell count of the spinal fluid fell to normal and the Wassermann reaction became negative.

12. Williams reports 23 cases of pneumonia treated with antipneumococcus serum. His results are inconclusive. [L. D. C.]

JOURNAL OF MEDICAL RESEARCH.

MAY, 1914.

1. WEIL. *Studies in Anaphylaxis.*
2. *SMITH. *Does Internal Administration of Potassium Iodide Have Any Effect on Thyroid Grafts in Guinea-pigs?*
3. *HONEIJ AND PARKER. *Leprosy. Flies in Relation to Transmission of Disease.*
4. JABLOWS. *Serologic Investigations in Typhus Exanthematicus.*
5. AYER. *Experiments in Cavity Formation and Fever in Tubercular Rabbits.*
6. *SMITH. *Experimental Study of the Relation of Bile to Ulceration of the Mucous Membrane of the Stomach.*
7. MACCORDICK. *Statistical Study of Normal Growth, Atrophy and Hypertrophy of the Middle Coat of the Radial Artery.*
8. WAHL. *Neuroblastomata.*

2. Smith failed to find thyroid grafts influenced by the administration of potassium iodide. Furthermore, no influence was produced by the administration of thyroid extract. Central necrosis was found in all grafts, regeneration taking place by the growth of thyroid tissue from the peripheral acini toward the centre.

3. Honeij and Parker have conducted interesting experiments in connection with the transmission of the bacillus of leprosy by means of the fly. In this preliminary report they state that a very high percentage of contamination was found in those flies that were allowed to feed freely upon purulent material. In no instance were "carriers" found at points immediately removed from the hospital.

6. Smith shows the injurious effect upon the gastric mucous membrane of bile in the presence of an excess of 0.5% hydrochloric acid. This action is shown when such material is introduced via the esophagus or the duodenum. The toxic action of bile is far more pronounced in the presence of 0.5% hydrochloric acid than in that of 0.5% sodium carbonate, or other alkalies. The lesions of the mucosa consist of necrosis of the epithelium with hemorrhages as a result of which small ulcerations are produced. The presence of mucus in the stomach serves to protect the epithelium from this toxic action. [L. H. S.]

JOURNAL OF INFECTIOUS DISEASES.

MAY, 1914.

1. HEKTOEN, *Production of Precipitins.*
2. *ROGERS, CLARK AND DAVIS. *The Colon Group of Bacteria.*
3. PEPPER AND KRUMBHAAR. *Diminished Coagulation of Blood in Anaphylactic Shock in the Dog.*
4. LEDERER. *New Method of Determining the Relative Stability of Sewage Effluent or Polluted River Water.*
5. *DEWITT. *Therapeutic Use of Certain Azo-Dyes in Experimentally Produced Tuberculosis in Guinea-pigs.*
6. GOODRICH. *Comparison of Plating and Microscopic Methods in Bacteriologic Examination of Milk.*

2. The authors have isolated a large number of strains of the colon group of bacteria from milk. They have studied their morphology, staining reactions, power of liquefaction of gelatin, production of indol, reduction of nitrates and fermentation of all of the common sugars. They have laid especial stress upon the carbon dioxide hydrogen ratio from dextrose fermentation. By this means they have formed two general groups of organisms,—those with approximately a ratio of 1.1 and those with higher ratios. The former show a higher percentage of cultures giving a positive indol test, reduction of nitrates and

fermentation of dulcite and glycerin. The latter showed fewer positive indol tests, but a higher percentage of fermentations with adonite and starch, and lower with dulcite and glycerin.

5. DeWitt has shown that trypan blue and red will penetrate experimental tubercles in guinea-pigs, but will neither penetrate the tubercle bacillus, nor in any way influence its growth. In therapeutic doses these dyes had no favorable nor curative results upon experimental tuberculosis in guinea-pigs.

[L. H. S.]

THE JOURNAL OF EXPERIMENTAL MEDICINE.

JULY, 1914.

1. CARREL, A. *Present Condition of a Strain of Connective Tissue Twenty-Eight Months Old.*
2. TUFFIER, T., AND CARREL, A. *Patching and Section of the Pulmonary Orifice of the Heart.*
3. CARREL, A. *Experimental Operations on the Sigmoid Valves of the Pulmonary Artery.*
4. PEARCE, R. M., AND PEPPER, O. H. *The Relation of the Spleen to Blood Destruction and Regeneration and to Hemolytic Jaundice. IX. The Changes in the Bone Marrow after Splenectomy.*
5. JOBLING, J. W., AND PETERSEN, W. *The Mechanism of Anaphylatoxin Formation. Studies on Ferment Action. XV.*
6. HASTINGS, T. W. *Complement Fixation Tests in Chronic Infective Deforming Arthritis and Arthritis Deformans.*
7. HASTINGS, T. W. *Concerning a Polyvalent Antigen for the Complement Fixation Test for Streptococcus Viridans Infection.*
8. CARTER, E. P. *A Note upon the Technic and Accuracy of the Method of Douglas and Haldane for Calculating the Dead Space in Breathing.*

Miscellany.

A CIRCULAR ABOUT CANCER.

THE American Society for the Control of Cancer has recently prepared for general distribution a circular entitled, "What You Should Know About Cancer." The society was organized in 1913 as a national association "to disseminate knowledge concerning the symptoms, diagnosis, treatment and prevention of cancer, to investigate the conditions under which cancer is found, and to compile statistics in regard thereto." The purpose of the society, as thus stated in its constitution, is to direct a campaign of education for the prevention of this disease. The society does not undertake or support pathological research or charitable or hospital care of individual cases, but endeavors to coöperate with all existing institutions as a clearing house of information.

The circular deals, in popular language, with the nature, prevalence, control, and cure of cancer, and with the efficacy of radium in cancer. Some selections from it are as follows:—

"Cancer is almost invariably at first a local disease. It is easily cured if promptly recognized and at once removed by competent treatment. It is practically always incurable in its later stages.

"The disease usually begins in some unhealthy spot or some point of local irritation: In external cancer there is something to be seen or felt, such as a wart, a mole, a lump or scab, or an unhealed wound or sore. Pain is rarely present. Cancer inside the body is often recognized by symptoms before a lump can be seen or felt. Persistent indigestion, with loss of weight and change of color, is always especially suspicious.

"Persistent abnormal discharge from any part of the body should arouse the suspicion of cancer, particularly if the discharge is bloody. The early and hopeful stages of cancer are usually painless.

"The only cure for cancer is to remove every vestige of the disease. The only sure way to do this is by a surgical operation. If taken at the beginning, the majority of cases of cancer are curable. All cases will end in death if let alone. Records of our best hospitals prove that the chances of cure are very high with early operation, and that these chances decrease with every day of delay. Early diagnosis is, therefore, all-important.

"The American Society for the Control of Cancer is studying these hospital records and will spread nation-wide the message of courage and hope in early recognition and prompt operation. By publishing circulars and articles in newspapers and magazines, and by organizing lectures and public meetings, this society is conducting a general campaign of education based on the latest knowledge of the disease. Thoughtful and influential people can help this work by joining the society. Write to the office, 289 Fourth Avenue, New York City, for further information.

"According to the most authoritative opinion, the curative effects of radium are practically limited today to superficial cancers of the skin, and to superficial growths of mucous membranes and certain deeper-lying tumors of bone, etc., which are not very malignant. Radium has probably been shown to exert a definitely curative effect on certain of these cases, while the disease is still local and in the early stages. Radium definitely relieves suffering when used in the advanced stages of deeper-seated cancers; but in those cases it improves only the visible or tangible manifestations and exerts no effect upon the disseminated disease as a whole. It is believed that there is as yet no proof that radium has finally cured any case of advanced and disseminated cancer.

"The public should take warning against dishonest and fake, money-getting radium-cure establishments, conducted by individuals who possess little or no radium, and have no knowledge of its use. These people promise cures, but are, in reality, unable to obtain even those palliative effects which are possible from radium.

"The best results of radium therapy can be secured only when comparatively large amounts are available for use, and the present limited world's supply of this metal places it out of reach of the great majority of patients."

CHANGES IN THE MEDICAL CORPS, U. S. NAVY, FOR THE THREE WEEKS ENDING JULY 4, 1914.

June 24, Asst. Surgeon J. T. Boone, M.R.C., to Naval Hospital, Portsmouth, N. H.

June 24, Surgeon F. C. Cook, detached, Receiving Ship, Norfolk, Va., to *Louisiana*.

Pharmacist W. B. Shaw, placed on the retired list from June 20, 1914, physical disability, detached from Naval Hospital, Boston, Mass., to home.

June 25, P. A. Surgeon G. F. Clark, detached, Naval Medical School, to *Michigan*.

Asst. Surgeon E. E. Woodland, detached, *Michigan* to home, wait order.

Asst. Surgeon A. J. A. Hamilton, M.R.C., commissioned from June 19.

Chief Pharmacist M. D. Baker, commissioned from April 17, 1914.

June 26, Surgeon M. S. Elliott, detached, *Florida* to home, wait order.

Surgeon T. W. Richards, detached, *Washington* to *Florida*.

P. A. Surgeon H. A. May, detached, *Solace* to *Washington*.

P. A. Surgeon W. L. Mann, detached, Naval Station, Cavite, P. I., to *Cincinnati*.

June 29, Medical Director E. P. Stone, placed on the retired list, from June 24, 1914, in accordance with Section 1415, Revised Statutes (physical disability).

P. A. Surgeon R. I. Longabauch, detached, Naval Hospital, Guam, to treatment, Naval Hospital, Mare Island, Cal.

July 1, Asst. Surgeon P. F. McMurdo, M.R.C., detached, *Vicksburg* to *Colorado*.

ANNOUNCEMENTS.

ANATOMY.

Professor of anatomy in the University of the Philippines wanted at a salary of $3500 per annum.

Transportation furnished to Manila, and returned after two years' satisfactory service.

For further details, including application blank, apply to Bureau of Appointments for Medical Alumni at the Harvard Medical School.

FELLOWSHIP FOR MEDICAL RESEARCH.

Ten Fellowships are open carrying a stipend of 250 pounds annually for medical research in certain British hospitals and university medical schools under a fund known as "Beit Memorial Fellowships for Medical Research."

Information, including requirements for Fellowships and list of recognized places where research may be conducted, are to be had at the Bureau for Appointments for Medical Alumni at the Harvard Medical School.

A. B. EMMONS, 2D, M.D.,
Director for Appointments for Medical Alumni,
Harvard Medical School.

APPOINTMENTS.

MCGILL UNIVERSITY.—*Dr. Herbert Stanley Birkett* has been appointed dean of the medical school.

WESTERN UNIVERSITY, LONDON, CANADA.—*Dr. F. R. Miller* has been appointed professor of physiology.

THE BOSTON DISPENSARY.—*Dr. Henry M. Chase* and *Dr. Hilbert F. Day*, formerly assistant surgeons, have been appointed surgeons and chiefs of the department of surgery, each having six months' service. *Dr. Benjamin Tenney* and *Dr. John Homans*, former chiefs of service have been appointed consultant surgeons.

Dr. B. L. Arms announces his election as professor of preventive medicine at the medical department of the University of Texas, Galveston.

ROCKEFELLER INSTITUTE.—The Board of Scientific Directors of the Rockefeller Institute for Medical Research announces the following appointments and promotions:

Dr. Hideyo Noguchi, hitherto an associate member in the department of pathology and bacteriology, has been made a member of the institute. *Dr. Alfred E. Cohn*, hitherto an associate in medicine, has been made an associate member for the terms of three years. *Dr. Wade H. Brown*, hitherto an associate in the department of pathology and bacteriology, has been made an associate member for the term of three years.

The following assistants have been made associates: *Harold Lindsay Amoss, M.D.* (pathology and bacteriology); *Arthur William Mickle Ellis, M.D.* (medicine); *Thomas Stotesbury Githens, M.D.* (physiology and pharmacology); *Israel Simon Kleiner, M.D.* (physiology and pharmacology); *Alphonse Raymond Dochez, M.D.* (medicine); *Dr. Dochez* has also been appointed resident physician in the hospital of the Rockefeller Institute to succeed *Dr. Swift.* (See below.)

The following Fellows have been made assistants: *Frederick Lamont Gates, M.D.* (physiology and pharmacology); *Louise Pearce, M.D.* (pathology and bacteriology).

The following new appointments are announced: *Chester Harmon Allen, M.S.*, fellow in chemistry; *Alan M. Chesney, M.D.*, assistant resident physician and assistant in medicine; *Harold Kniest Faber, M.D.*, fellow in pathology; *Ross Alexander Jamieson, M.D.*, assistant resident physician and assistant in medicine; *Benjamin Schönbrun Kline, M.D.*, fellow in physiology and pharmacology; *John Jamieson Morton, Jr., M.D.*, fellow in pathology; *James Kuhn Senior, M.A.*, fellow in chemistry; *Joseph Richard Turner, M.D.*, fellow in pathology.

Dr. Paul Franklin Clark, formerly associate in pathology and bacteriology has been appointed assistant professor of bacteriology in the University of Wisconsin.

Dr. Homer F. Swift, formerly resident physician in the hospital of the Rockefeller Institute, and Associate in Medicine, has been appointed associate professor of Medicine at the College of Physicians and Surgeons, Columbia University and associate attending physician, Presbyterian Hospital.

RECENT DEATHS.

DR. ANDREW BAYLIES, of Worcester, Mass., died in that city July 7, 1914, aged 75 years. He was a retired Fellow of The Massachusetts Medical Society and a graduate of the New York University Medical College in 1879.

DR. JAMES M. WATSON, who died recently at Falmouth, Mass., was born in East Sangerville, Me., on Jan. 16, 1860. He graduated from the Foxcroft Academy in 1881, from the Maine Central Institute in 1883, from New York University in 1886, and from the New York Homeopathic Medical College in 1888. He had practised his profession at Falmouth since 1890. He is survived by his widow, by two daughters, and by one son.

BOOKS AND PAMPHLETS RECEIVED.

The Clinics of John B. Murphy, M.D. W. B. Saunders Co. June, 1914. Vol. 111. No. 3.

Practical Hormone Therapy by H. R. Harrower. Baillière, Tyndall & Cox. 1914.

Anoci-Association by George W. Crile, M.D. W. B. Saunders Co. 1914.

Prevention of Deafness by Joseph B. Greene, M.D. Reprint.